

NPSI-1020-002.4

NPSI RSDM 2.4

NAVAIR PORTABLE SOURCE INITIATIVE (NPSI) STANDARD FOR REUSABLE SOURCE DATASET METADATA (RSDM)

Prepared For:

Common Simulation Products (CSP)
NAVAIR Aviation Training Systems PMA 205

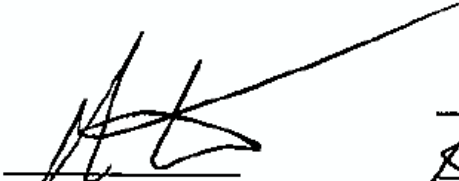
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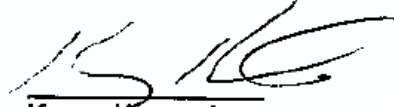
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14. ABSTRACT The mission of NPSI is to provide maximum database reuse across Type/Model/Series platforms to lower the life cycle cost of out-the-window visual terrain, 3-D models, and sensor databases, also adding dataset archive capability, and short-notice distribution services. The metadata and metadata architectures are used to facilitate data discovery, data understanding, and effective data distribution. The metadata is also employed for NPSI dataset archiving and distribution. This document describes the metadata schema specified for NPSI data interchange.					
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1. Introduction

NPSI is a simple concept with the goal of minimizing waste and redundancy in database production without inhibiting innovation. The basic concept of NPSI is to capture value added work performed on raw source data. This concept has resulted in significant cost savings to many Department of Defense (DoD) programs by minimizing the amount of raw source data required to be purchased and processed. The NPSI archive stores refined source data in datasets and makes the datasets available for utilization by future programs.

1.1 NPSI Metadata

The intent of the NPSI metadata is to contain metadata information that accompanies a simulation dataset distribution to programs. The metadata should contain enough application information to assist in ingesting the dataset by a runtime database generator.

Based on eXtensible Markup Language (XML) technology, the intent of the NPSI metadata is to be extensible, allowing new definitions of data types and applications to be added progressively. However, the data structure must conform to a universal standardized format to allow interoperability and data interchange with minimum intervention. The structural definition, logical relationships, and business rules of a database is summarized in a "schema". In XML technology, a schema is also a validating document that defines the "grammar" of an XML document. When an XML database document is validated against a schema, the structural conformity and business rules are enforced.

As an example, consider the following XML formatted data for defining a raster file format:

```
<RasterFileFormat>
  <FormatName>TIFF</FormatName>
  <Order>BIP</Order>
  <DataType>8-BIT_UNSIGNED</DataType>
  <Orientation>UPPER_LEFT</Orientation>
  <NumChannels>3</NumChannels>
  <CompressionType>NONE</CompressionType>
  <Size XSize="12550" YSize="12550"/>
  <Channel channel_num="3">
    <Color ColorSpace="RGB" Name="R"/>
  </Channel>
  <Channel channel_num="2">
    <Color ColorSpace="RGB" Name="G"/>
  </Channel>
  <Channel channel_num="1">
    <Color ColorSpace="RGB" Name="B"/>
  </Channel>
</RasterFileFormat>

<TargetResolution value="0.6" unit="METERS"/>
<Georeference>
  <SpatialReference>
    <Geographic>
      <LatitudeResolution unit="ARCDEG" value="4.4915764E-05"/>
      <LongitudeResolution unit="ARCDEG" value="4.4915764E-05"/>
    </Geographic>
    <Geodetic>
      <Datum>WGS84</Datum>
      <Ellipsoid>WGS_1984</Ellipsoid>
    </Geodetic>
  </SpatialReference>
  <SpatialDomain>
    <UpperLeft>
      <XCoordinate unit="DEGREES_LATLON" value="-114.50179663056"/>
```

```

    <YCoordinate unit="DEGREES_LATLON" value="35.5017966305682"/>
  </UpperLeft>
  <UpperRight>
    <XCoordinate unit="DEGREES_LATLON" value="-113.99824599805"/>
    <YCoordinate unit="DEGREES_LATLON" value="35.5017966305682"/>
  </UpperRight>
  <LowerLeft>
    <XCoordinate unit="DEGREES_LATLON" value="-114.501796630568"/>
    <YCoordinate unit="DEGREES_LATLON" value="34.9982459980548"/>
  </LowerLeft>
  <LowerRight>
    <XCoordinate unit="DEGREES_LATLON" value="-113.99824599805"/>
    <YCoordinate unit="DEGREES_LATLON" value="34.998245998054"/>
  </LowerRight>
</SpatialDomain>
</Georeference>

```

The focus of XML schema is the data and the structure of the data. The meaningful nature of the components promotes the interchangeability of the data across heterogeneous platforms. The self-documentation and structure preservation inherent in XML facilitates interoperability between applications, as desired under the NSPI program.

2. Organization of the Data

2.1 NPSI Datasets

NPSI datasets are distinguished from RAW source data collections by the amount of refinement that has been completed before acceptance into the NPSI archive. These refinements include workflow data and metadata. Only the most processed versions of each data element will be present in the NPSI dataset. For dataset distributions, NPSI metadata must accompany the set to instruct database production systems how to interpret each of the objects and layers in the dataset. The metadata document for dataset distribution will follow the NPSI schema NPSI Standard for Reusable Source Dataset Metadata NPSI-1020-002.4 (this document). In summary, the objective of NPSI metadata is to document the contents of the dataset and to reduce pre-processing time and effort in creating databases from NPSI datasets.

2.2 NPSI Data Folder Structure

When data is to be distributed, the data will be exported from the NPSI archive into a file-based dataset. The accompanying NPSI metadata references the file paths and file names of the data files. Data types are distributed using a descriptive file folder name and structure.

2.3 Data Packaging

NPSI dataset is delivered as a set of folders. An example of the folder is shown below in Figure 1.

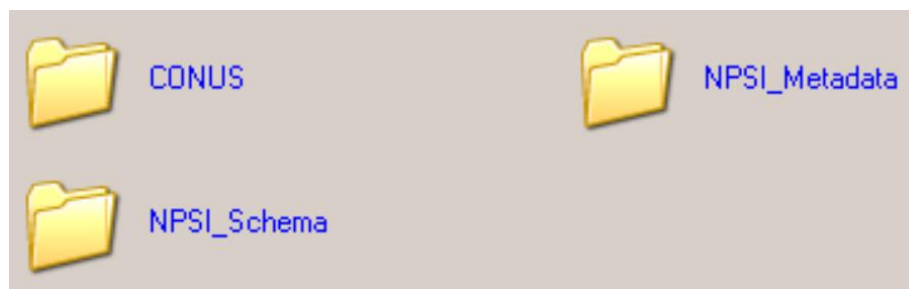


Figure 1 NPSI Package.

NPSI_Metadata

This is the main folder that stores all NPSI metadata in XML format. Included in the XML folder are style-sheets that may be used to display the XML data with *Internet Explorer*.

CONUS

This is the root folder for Continental United States datasets that stores all data files being distributed with the metadata. The folders underneath are organized by geographical locations and data types (raster, vectors and cultural features). The attached example only contains the folder structure and thumbnail files for visual raster data.


NPSI_Schema

This folder stores the schema used to validate and load the metadata XML files.

3. Illustrative Examples

The following metadata examples, shown in Figure 2 thru Figure 7, were created using the NPSI schema documented in this standard. The illustrations were captured from web browser renderings of NPSI XML files using an XML style-sheet. Note that not all of the data in the NPSI metadata are displayed by the style-sheet used.

3.1 NPSI Metadata Example for Town of Mercury Dataset

Mercury, NV 1m		Version: 2.2
<p>Town of Mercury, Nevada: The coverage area is defined by 36°33'-36°42' N / 115°56'-116°5' W covering the Town of Mercury and immediate surrounding area. OTW dataset is a ~1m true-color ortho-mosaic built from IKONOS scenes. This product is built fusing 1m IK panchromatic data with 4m IK multi-spectral data. The image tiles are co-registered and tonally balanced to surrounding 5m regional data. The high resolution images are feathered in with the surrounding medium resolution data. Included with this set are medium resolution tiles of 5m OTW immediately surrounding the high resolution data. Included elevation data are 10m and 30m DTED covering the medium resolution. Irradiance 1m raster data are included for a section of the Town of Mercury. This layer represents cultural light irradiance from Mercury vapor lamp and Low pressure and High pressure sodium lamps NVG albedo layer (Class B NVIS reflectivity) data with 1m/15m resolutions are included for the purpose of physics-based NVG simulation/stimulation rendering. The NVG albedo data have 8-bit depth at 15m and 16-bit depth at 1m. The data were created from ortho-rectified and atmospherically corrected multi-spectral imagery.</p>		
AUTHOR	Harris_JL	
CREATION DATE	2006-09-19	
INDUSTRY CONTACT		
GOVERNMENT CONTACT		
LICENSE SUMMARY	DOD_TITLE50	
CLASSIFICATION SUMMARY	UNCLASS	LIMDIS

DATABASE COMPONENT INDEX		
RASTER FILES OTW ELEVATION REFLECTIVITY IRRADIANCE	VECTOR FILES POINT	DICTIONARY

Figure 2 NPSI metadata example: Identification information section.


<p>RASTER TYPE OTW</p> <p>FILENAME MERCURY_1M_0002.TIF</p> <p>RELATIVE PATH \CONUS\WUSA\Nevada\Mercury\Raster\OTW\1m\</p>  <p>RESOLUTION 1_METERS</p>	<p>FILE FORMAT INFORMATION</p> <p>FORMAT NAME TIFF</p> <p>ORDER BIP</p> <p>DATA TYPE 8-BIT_UNSIGNED</p> <p>ORIENTATION UPPER_LEFT</p> <p>PIXEL DIMENSIONS 8050 x 8050</p> <p>CHANNELS</p> <p># CHANNELS 3</p> <p>COLOR CHANNEL</p> <p>COLOR SPACE RGB</p> <p>CHANNEL_0 B</p> <p>CHANNEL_1 G</p> <p>CHANNEL_2 R</p>	<p>ORTHO GEOGRAPHIC REFERENCE</p> <p>LOWERLEFT</p> <p>LONGITUDE -116.08702041225 DEGREES_LATLON</p> <p>LATITUDE 36.5581442297262 DEGREES_LATLON</p> <p>LOWERRIGHT</p> <p>LONGITUDE -116.014715015033 DEGREES_LATLON</p> <p>LATITUDE 36.5581442297262 DEGREES_LATLON</p> <p>UPPERRIGHT</p> <p>LONGITUDE -116.014715015033 DEGREES_LATLON</p> <p>LATITUDE 36.6304496269434 DEGREES_LATLON</p> <p>UPPERLEFT</p> <p>LONGITUDE -116.08702041225 DEGREES_LATLON</p> <p>LATITUDE 36.6304496269434 DEGREES_LATLON</p> <p>X PIXEL</p> <p>Y PIXEL</p> <p>UTM ZONE</p> <p>DEGREE PER PIXEL 8.9831528E-006 DEGREES_LATLON</p>
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Figure 3 NPSI metadata example: 1m Out-the-Window raster data.


<p>RASTER TYPE OTW</p> <p>FILENAME N3630W11530.tif</p> <p>RELATIVE PATH \CONUS\WUSA\Nevada\Statewide\Raster\OTW\5m\</p>  <p>RESOLUTION 5_METERS</p>	<p>FILE FORMAT INFORMATION</p> <p>FORMAT NAME TIFF</p> <p>ORDER BIP</p> <p>DATA TYPE 8-BIT_UNSIGNED</p> <p>ORIENTATION UPPER_LEFT</p> <p>PIXEL DIMENSIONS 11212 x 11212</p> <p>CHANNELS</p> <p># CHANNELS 3</p> <p>COLOR CHANNEL</p> <p>COLOR SPACE RGB</p> <p>CHANNEL_2 R</p> <p>CHANNEL_1 G</p> <p>CHANNEL_0 B</p>	<p>ORTHO GEOGRAPHIC REFERENCE</p> <p>UPPERLEFT</p> <p>LONGITUDE -116.001796630568 DEGREES_LATLON</p> <p>LATITUDE 37.0017966305682 DEGREES_LATLON</p> <p>UPPERRIGHT</p> <p>LONGITUDE -115.498245998055 DEGREES_LATLON</p> <p>LATITUDE 37.0017966305682 DEGREES_LATLON</p> <p>LOWERRIGHT</p> <p>LONGITUDE -115.498245998055 DEGREES_LATLON</p> <p>LATITUDE 36.4982459980548 DEGREES_LATLON</p> <p>LOWERLEFT</p> <p>LONGITUDE -116.001796630568 DEGREES_LATLON</p> <p>LATITUDE 36.4982459980548 DEGREES_LATLON</p> <p>X PIXEL</p> <p>Y PIXEL</p> <p>UTM ZONE</p> <p>DEGREE PER PIXEL 4.4915764E-005 DEGREES_LATLON</p>
---	---	--

Figure 4 NPSI metadata example: 5m Out-the-Window raster data.

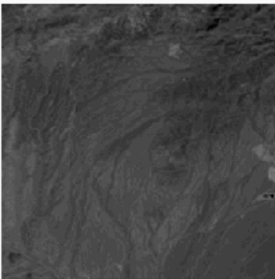
RASTER TYPE REFLECTIVITY		FILE FORMAT INFORMATION		ORTHO GEOGRAPHIC REFERENCE	
FILENAME	nvis_mercury_1m_tile1.tif	FORMAT NAME	TIFF	LOWERLEFT	
RELATIVE PATH	\\CONUS\\WUSA\\Nevada\\Mercury\\Raster\\Reflectivity\\1m\\	ORDER	BIP	LONGITUDE	-116.08702041225 DEGREES_LATLON
		DATA TYPE	8-BIT_UNSIGNED	LATITUDE	36.6300094524558 DEGREES_LATLON
RESOLUTION	1_METERS	ORIENTATION	UPPER_LEFT	LOWERRIGHT	
		PIXEL DIMENSIONS	8050 x 8050	LONGITUDE	-116.014715015033 DEGREES_LATLON
		CHANNELS		LATITUDE	36.6300094524558 DEGREES_LATLON
		# CHANNELS	1	UPPERRIGHT	
		REFLECTIVITY CHANNEL		LONGITUDE	-116.014715015033 DEGREES_LATLON
		SPECTRAL PROFILE ID	NVG_ClassB	LATITUDE	36.702314849673 DEGREES_LATLON
		PIXEL MAPPING		UPPERLEFT	
		NVIS Albedo	%	LONGITUDE	-116.08702041225 DEGREES_LATLON
		Min	0	LATITUDE	36.702314849673 DEGREES_LATLON
		Max	100	X PIXEL	
		Gamma		Y PIXEL	
				UTM_ZONE	
				DEGREE PER PIXEL	8.9831528E-006 DEGREES_LATLON

Figure 5 NPSI metadata example: 1m Reflectivity (1 band) raster data.

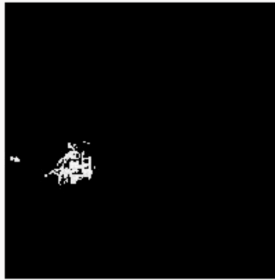
RASTER TYPE IRRADIANCE		FILE FORMAT INFORMATION		ORTHO GEOGRAPHIC REFERENCE	
FILENAME	Hg_irradiance_nvis8_ik_1m_mercury_acfuse_2001may31_0003.tif	FORMAT NAME	TIFF	LOWERLEFT	
RELATIVE PATH	\\CONUS\\WUSA\\Nevada\\Mercury\\Raster\\Irradiance\\1m\\	ORDER	BIP	LONGITUDE	-116.08702041225 DEGREES_LATLON
		DATA TYPE	FLOATING_POINT	LATITUDE	36.6300094524558 DEGREES_LATLON
RESOLUTION	1_METERS	ORIENTATION	UPPER_LEFT	LOWERRIGHT	
		PIXEL DIMENSIONS	8050 x 8050	LONGITUDE	-116.014715015033 DEGREES_LATLON
		CHANNELS		LATITUDE	36.6300094524558 DEGREES_LATLON
		# CHANNELS	1	UPPERRIGHT	
		IRRADIANCE CHANNEL		LONGITUDE	-116.014715015033 DEGREES_LATLON
		ILLUMINATING SOURCE ID	LAMP_MERCURY_VAPOR	LATITUDE	36.702314849673 DEGREES_LATLON
				UPPERLEFT	
				LONGITUDE	-116.08702041225 DEGREES_LATLON
				LATITUDE	36.702314849673 DEGREES_LATLON
				X PIXEL	
				Y PIXEL	
				UTM_ZONE	
				DEGREE PER PIXEL	8.9831528E-006 DEGREES_LATLON

Figure 6 NPSI metadata example: 1m Mercury vapor lamp Irradiance (1 band) raster data.

POINT VECTOR (1 Files)				
VECTOR TYPE POINT		GEOREFERENCE	SHAPE FIELDS	
FEATURE TYPE CULTURAL_LIGHTS		MIN X: -116.08702041225	FIELD NAME	FIELD TYPE
# FEATURE		MIN Y: 36.6300094524558	Power	Integer
FILENAME Mercury_lights.shp		MAX X: -116.014715015033	Height	Integer
RELATIVE		MAX Y: 36.702314849673	X	Float
PATH \CONUS\WUSA\Nevada\Mercury\Vector			Y	Float
			Type	String

Figure 7 NPSI metadata example: Cultural lights vector points data.

4. Organization of the Standard

The metadata standard is defined in a schema file based on World Wide Web Consortium (W3C) XML format (<http://www.w3.org/2001/XMLSchema>) and is available separately from this document in XML Schema Definition (XSD) file format. The filename naming convention of the schema is below:

NPSI.X.YY.xsd, where X = Major revision and YY = minor file revision.

The schema hard copy is reported in the following sections:

- NPSI Base
- NPSI Identification Information
- NPSI Distribution Information
- NPSI Dataset
- Complex Types

4.1 NPSI Base

NPSI Base is the root element of the XML document. Its children are the complete content of the metadata for a given dataset.

4.2 NPSI Identification Information

NPSI Identification Information contains the dataset identification elements, including licensing and classification of included data files.

4.3 NPSI Distribution Information

NPSI Distribution Information contains the contact information to obtain the distributable dataset.

4.4 NPSI Dataset

NPSI Dataset element is grouped into the following groups:

4.4.1 Raster Data

The raster data contains raster data files used in the runtime database generation process. The raster data may represent imagery, elevation, material classification, various masks, in-band sensor reflectivity rayer, etc. Each data file may contain n number of channels.

4.4.2 Vector Data

The vector data contains vector feature data files used in the runtime database generation process. The vector data may represent point, linear, and areal vector types.

4.4.3 Cultural Feature Data

Models and other cultural feature elements that are used at runtime or during the runtime database generation process.

4.4.4 NPSI Dictionary

The data dictionary serves as a repository for information about parameter definitions and valid values of the parameters included in the data set. This information is used to create the connection between the data dictionary and datasets and can be used to automate the data ingest and update process.

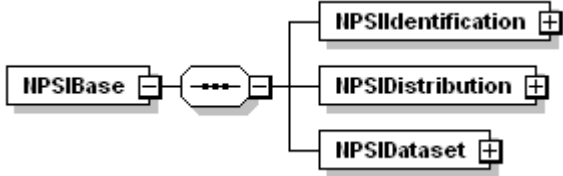
4.4.5 Complex Types

The complex types section contains a listing of all the complex types used by the above elements. A complex type is a typical element that may be used in multiple instances of elements. The list is alphabetical and not grouped into logical application. Each element that uses a complex type will have a hyperlink text to its complex type definition.

Appendix A NSPI Schema in a pictorial detailed description.

A.1 NSPI Base

element **NPSIBase**

diagram	 <p>The diagram illustrates the structure of the NPSIBase element. It shows a root box labeled 'NPSIBase' with a small square icon on its right side. This box is connected to a central octagonal connector containing three dots. From the right side of this connector, three lines branch out to three separate boxes stacked vertically: 'NPSIDidentification', 'NPSIDistribution', and 'NPSIDataset'. Each of these three boxes has a small square icon with a plus sign on its right side, indicating that each is a complex or optional sub-element.</p>
annotation	<p>documentation "NPSIBase" is the root element of NSPI XML document.</p>

A.2 NPSIIdentification

element **NPSIBase/NPSIIdentification**

diagram						
attributes	Name dataset_ID	Type xsd:string	Use	Default	Fixed	annotation documentation Unique dataset identifier implemented with GUID
annotation	documentation NPSIIdentification contains administrative information about the dataset including dataset title, descriptive summary of coverage and purpose, version history, author and license and classification information.					

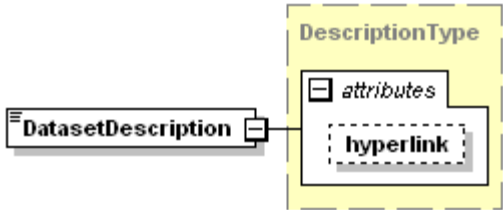
attribute **NPSIBase/NPSIIdentification/@dataset_ID**

type	xsd:string
annotation	documentation Unique dataset identifier implemented with GUID.


element **NPSIBase/NPSIIdentification/DatasetTitle**

diagram	
type	xsd:string
annotation	documentation The title by which the data set is known. The regional name of the dataset coverage is often used. For example: "Nellis AFB", "NAS Pensacola, Florida", "ECUSA".

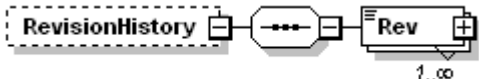
element **NPSIBase/NPSIdentification/DatasetDescription**

diagram						
type	DescriptionType					
attributes	Name hyperlink	Type xsd:string	Use	Default	Fixed	annotation
annotation	documentation Descriptions of the dataset. Descriptions include the dataset extent/coverage, included data type, best resolution, and purpose. A separate document may be attached and the URL location is indicated in "hyperlink" attribute.					

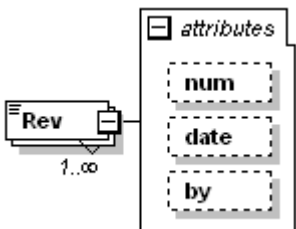
element **NPSIBase/NPSIdentification/DatasetVersion**

diagram						
type	restriction of xsd:string					
annotation	documentation Version of this dataset. A typical format would be: "r.M.m" where r=release number, M=major revision, m=minor revision. For example 1.2.5.					

element **NPSIBase/NPSIdentification/RevisionHistory**

diagram						
annotation	documentation A list of revision history to this dataset and metadata. The list contain the description of the revision with revision number, date, and the person or organization responsible for the revision. XML example: <RevisionHistory> <Rev num="1.0.0">Initial Release</Rev> </RevisionHistory>					

element **NPSIBase/NPSIdentification/RevisionHistory/Rev**

diagram						
type	extension of xsd:string					
attributes	Name num	Type xsd:string	Use	Default	Fixed	annotation

	date	xsd:date
	by	xsd:string

attribute **NPSIBase/NPSIIidentification/RevisionHistory/Rev/@num**

type	xsd:string
------	------------

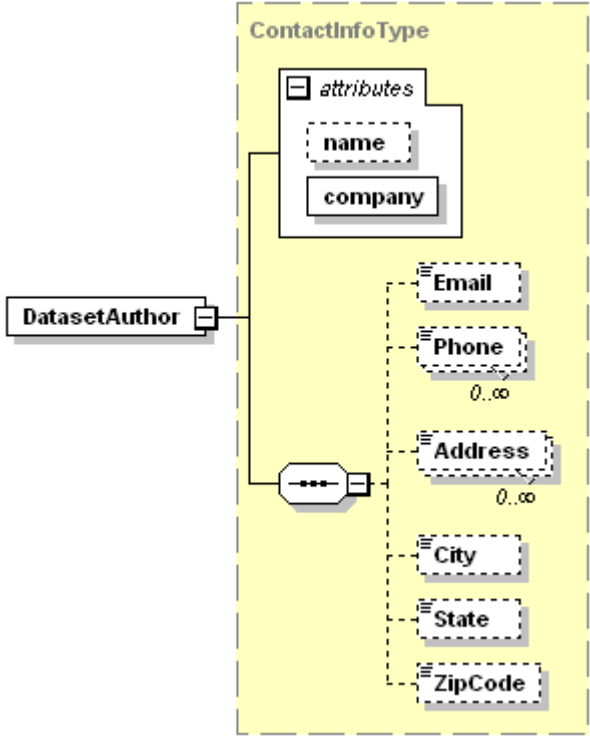
attribute **NPSIBase/NPSIIidentification/RevisionHistory/Rev/@date**

type	xsd:date
------	----------

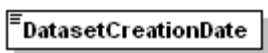
attribute **NPSIBase/NPSIIidentification/RevisionHistory/Rev/@by**

type	xsd:string
------	------------

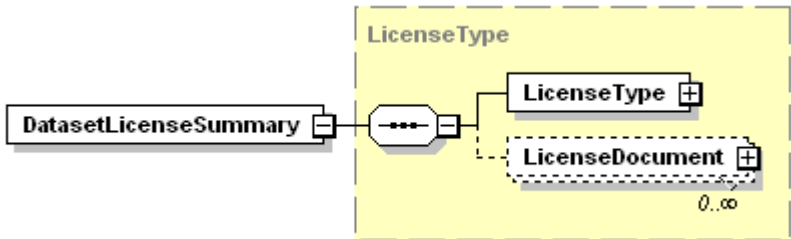
element **NPSIBase/NPSIIidentification/DatasetAuthor**

diagram	 <p>The diagram illustrates the structure of the DatasetAuthor element. It is a container element that includes a ContactInfoType complex type. The ContactInfoType is shown as a yellow-shaded box containing an attributes group with name and company attributes, and a sequence of child elements: Email, Phone, Address, City, State, and ZipCode. The Phone and Address elements are marked with a cardinality of 0..∞. The DatasetAuthor element is represented by a rectangle with a small square icon on its right side, connected to the ContactInfoType box by a line.</p>					
type	ContactInfoType					
attributes	Name	Type	Use	Default	Fixed	annotation
	name	xsd:string				
	company	xsd:string	required			
annotation	documentation Contact information of the dataset original author.					

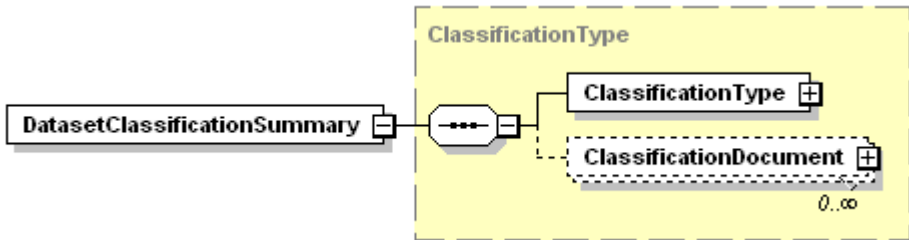
element **NPSIBase/NPSIDIdentification/DatasetCreationDate**

diagram	 A rectangular box labeled DatasetCreationDate with a small square icon on the left side.
type	xsd:date
annotation	documentation The date this NSPI dataset is created and initially released.

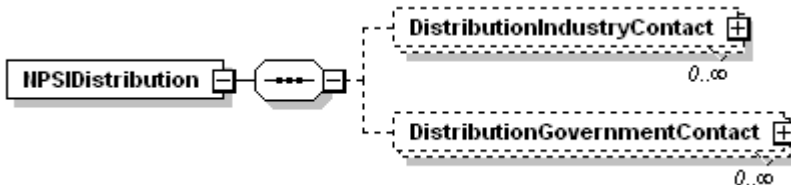
element **NPSIBase/NPSIDIdentification/DatasetLicenseSummary**

diagram	 A diagram showing the DatasetLicenseSummary element connected to a container labeled LicenseType . Inside the container, there is a LicenseType element and a LicenseDocument element. The LicenseDocument element is enclosed in a dashed box with a multiplicity of $0..∞$.
type	LicenseType
annotation	documentation Restrictions and legal prerequisites for accessing and using the overall dataset.

element **NPSIBase/NPSIDIdentification/DatasetClassificationSummary**

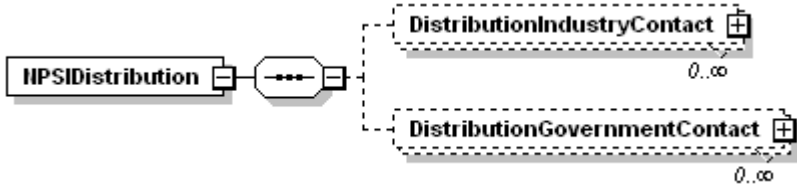
diagram	 A diagram showing the DatasetClassificationSummary element connected to a container labeled ClassificationType . Inside the container, there is a ClassificationType element and a ClassificationDocument element. The ClassificationDocument element is enclosed in a dashed box with a multiplicity of $0..∞$.
type	ClassificationType
annotation	documentation Handling restrictions imposed on the overall dataset for national security, privacy, or other concerns.

element **NPSIBase/NPSIDistribution**

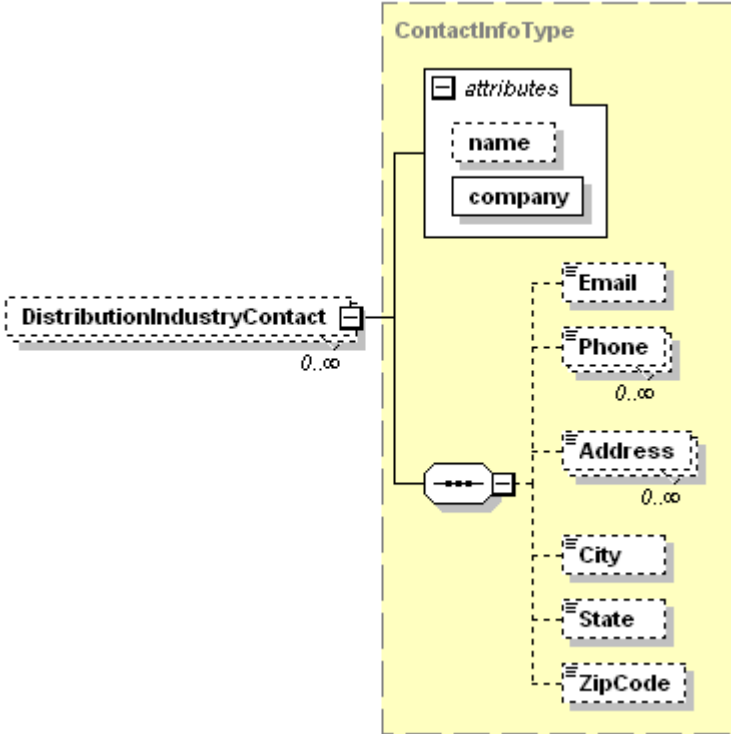
diagram	 A diagram showing the NPSIDistribution element connected to a container. Inside the container, there are two elements: DistributionIndustryContact and DistributionGovernmentContact . Both elements are enclosed in dashed boxes with a multiplicity of $0..∞$.
annotation	documentation NPSIDistribution contains dataset distribution contact information. This element contains information on how to obtain the distributable dataset.

A.3 NPSIDistribution

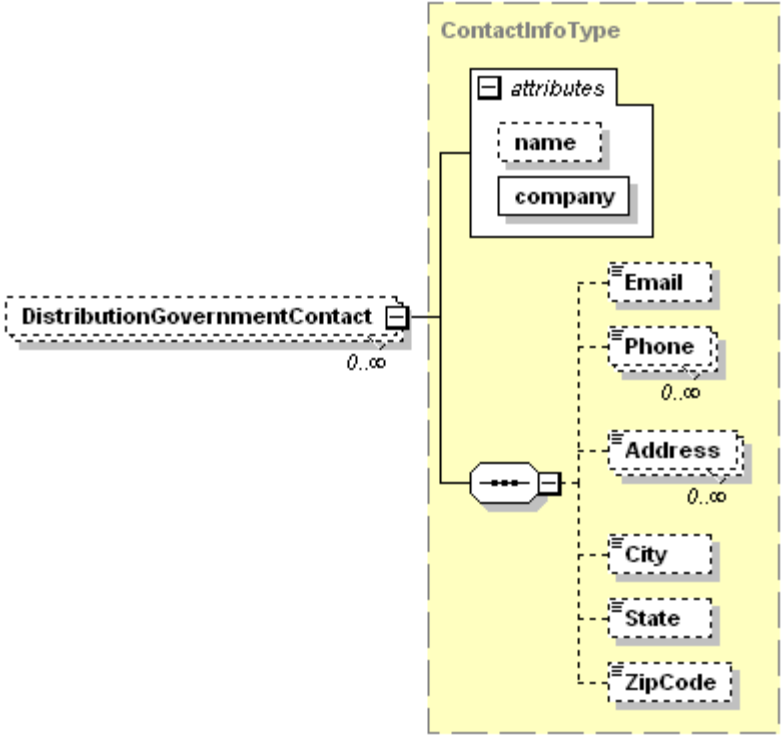
element **NPSIBase/NPSIDistribution**

diagram	 <p>The diagram shows the NPSIDistribution element as a container. Inside, there is a sequence container (represented by a rounded rectangle with three dots) that contains two child elements: DistributionIndustryContact and DistributionGovernmentContact. Both child elements are shown with dashed borders and a plus icon in the top right corner, indicating they are optional. The cardinality 0..∞ is shown next to each child element.</p>
annotation	<p>documentation NPSIDistribution contains dataset distribution contact information. This element contains information on how to obtain the distributable dataset.</p>

element **NPSIBase/NPSIDistribution/DistributionIndustryContact**

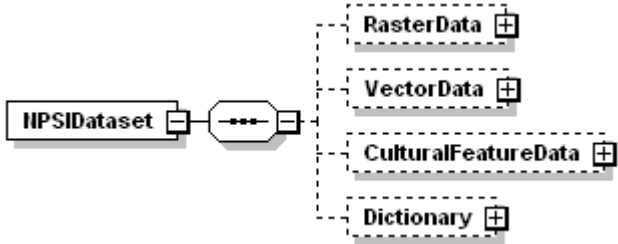
diagram	 <p>The diagram shows the DistributionIndustryContact element as a container. It is connected to a large yellow box labeled 'ContactInfoType'. Inside this box, there is an 'attributes' section containing 'name' and 'company'. Below the attributes, there is a sequence container (rounded rectangle with three dots) that contains five child elements: Email, Phone, Address, City, and State, and ZipCode. The cardinality 0..∞ is shown next to the DistributionIndustryContact element and the Address element.</p>					
type	ContactInfoType					
attributes	Name name company	Type xsd:string xsd:string	Use required	Default	Fixed	annotation

element **NPSIBase/NPSIDistribution/DistributionGovernmentContact**

diagram						
type	ContactInfoType					
attributes	Name	Type	Use	Default	Fixed	annotation
	name	xsd:string				
	company	xsd:string	required			

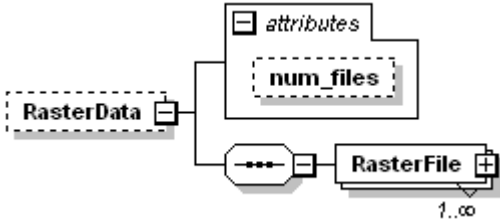
A.4 NPSIDataset

element **NPSIBase/NPSIDataset**

diagram	 <p>The diagram shows a box labeled 'NPSIDataset' connected to a container (octagon with three dots) which is then connected to four dashed boxes stacked vertically: 'RasterData', 'VectorData', 'CulturalFeatureData', and 'Dictionary'. Each of these four boxes has a small square icon with a plus sign in its top right corner.</p>
annotation	<p>documentation</p> <p>NPSIDataset is the data container of NPSI dataset. The data is organized in three data types -raster data, vector data, and cultural feature data or models.</p> <p>Dictionary element contains definitions of referenced "id"s.</p>

A.4.1 RasterData

element **NPSIBase/NPSIDataset/RasterData**

diagram	 <p>The diagram shows a dashed box labeled 'RasterData' connected to a container (octagon with three dots) which is then connected to a box labeled 'RasterFile'. The 'RasterFile' box has a small square icon with a plus sign in its top right corner and a '1..∞' cardinality label below it. Above the 'RasterData' box is an 'attributes' box containing a dashed box labeled 'num_files'.</p>					
attributes	Name	Type	Use	Default	Fixed	annotation
	num_files					documentation Total number of files define in "RasterData"
annotation	<p>documentation</p> <p>Contains raster data files used in the runtime database generation process. The raster data may represent Out-the-Window, Elevation, Material Classification, various Masks, In-band Sensor Reflectivity Layer, etc. Each data file may contain "n" number of channels.</p>					

attribute **NPSIBase/NPSIDataset/RasterData/@num_files**

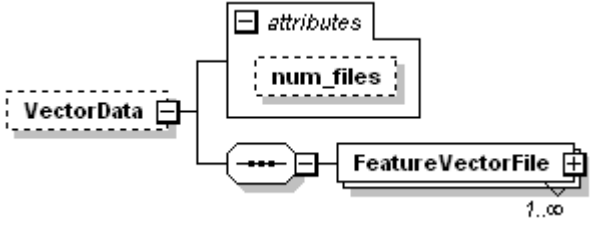
annotation	<p>documentation</p> <p>Total number of files define in "RasterData".</p>
------------	---

element **NPSIBase/NPSIDataset/RasterData/RasterFile**

diagram	<p>The diagram illustrates the structure of the RasterFile element. It is an extension of GenericRasterFileType. The RasterFile element has a cardinality of 1..∞. It contains an attributes container with two attributes: raster_type and raster_priority. Additionally, it includes several other elements: File, RasterFileFormat, TargetResolution, Georeference, PerspectiveReference, BlendMethod, HistoryField (with a cardinality of 0..∞), AggregationField (with a cardinality of 0..∞), and Description.</p>					
type	extension of GenericRasterFileType					
attributes	Name	Type	Use	Default	Fixed	annotation
	raster_type	derived by: xsd:string				documentation Type of raster data application: ALPHA_MASK, OTW, TEXTURE, REFLECTIVITY, WATER_MASK, ELEVATION, COLOR, MULTISPECTRAL, HYPERSPECTRAL, REFLECTION, RADIANCE, MATERIAL_INDEX, and MATERIAL_PROPERTY.
	raster_priority	xsd:int				documentation An integer that defines the build order of the raster data files. This number should be unique for each raster file. The lowest number will be built first and is often considered background. The highest number will always be present.

A.4.2 VectorData

element **NPSIBase/NPSIDataset/VectorData**

diagram						
attributes	Name num_files	Type xsd:integer	Use	Default	Fixed	annotation documentation Total number of vector feature files.
annotation	documentation Contains vector feature data files used in the runtime database generation process.					

attribute **NPSIBase/NPSIDataset/VectorData/@num_files**

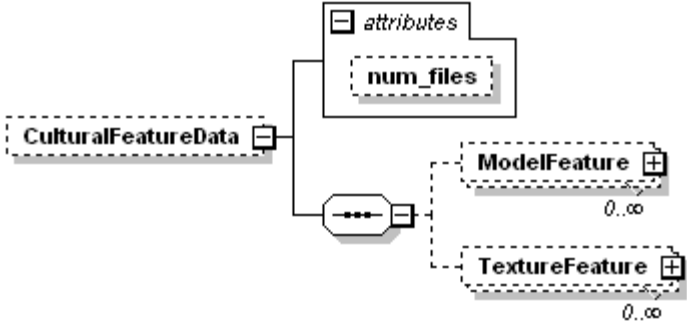
type	xsd:integer
annotation	documentation Total number of vector feature files.

element **NPSIBase/NPSIDataset/VectorData/FeatureVectorFile**

diagram						
type	GenericVectorType					
attributes	Name	Type	Use	Default	Fixed	annotation
	num_features					documentation Total number of features within the vector feature file.
	vector_type	derived by: xsd:string				documentation The type of vector: point, linear, or areal.
annotation	documentation Vector feature file(s).					

A.4.3 [CulturalFeatureData](#)

element **NPSIBase/NPSIDataset/CulturalFeatureData**

diagram						
attributes	Name num_files	Type xsd:integer	Use	Default	Fixed	annotation documentation Total number of cultural feature files.
annotation	documentation Models and other cultural feature elements that are used at runtime or during the runtime database generation process.					

attribute **NPSIBase/NPSIDataset/CulturalFeatureData/@num_files**

type	xsd:integer
annotation	documentation Total number of cultural feature files.

element **NPSIBase/NPSIDataset/CulturalFeatureData/ModelFeature**

diagram	<p>The diagram illustrates the structure of the ModelFeatureType. It is a container type that includes an attributes section and a list of child elements. The attributes section contains feature_type, name, featureID, and repositionable. The child elements are Georeference, ModelOrigin, File, ModelFileFormat, PolygonMaterialPalette, LightPointPalette, Lightgroups, Articulations, Switches, LODs, ExternalReferences, Textures, HistoryField, and Description. A ModelFeature element is shown with a cardinality of 0..∞.</p>					
type	ModelFeatureType					
attributes	Name feature_type	Type derived by: xsd:string	Use required	Default	Fixed	annotation documentation Type of model feature air, ground, sea, etc.
	name	xsd:string				documentation Short name of model.
	featureID	xsd:ID	required			documentation Unique ID that identifies the

	<p>repositionable derived by: xsd:boolean</p>	<p>cultural feature. documentation If the model is repositionable, then this element is TRUE, otherwise if static the element is FALSE. If the model is static, then Georeference element is mandatory.</p>
annotation	<p>documentation Static or moving/repositionable 3D model data.</p>	

element **NPSIBase/NPSIDataset/CulturalFeatureData/TextureFeature**

diagram	<pre>classDiagram class TextureFeatureType { File RasterFileFormat TargetResolution HistoryField Description } class TextureFeature { } TextureFeatureType --> TextureFeature</pre>	
type	<p>TextureFeatureType</p>	
annotation	<p>documentation Texture file is a raster type file to be applied to the ModelFeature object.</p>	

A.4.4 Dictionary

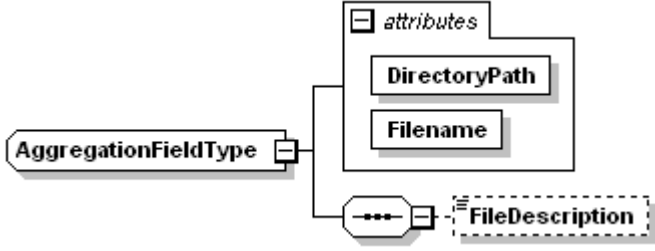
element **NPSIBase/NPSIDataset/Dictionary**

diagram	<p>The diagram illustrates the structure of the DictionaryType. A central class, Dictionary, is connected to a container class, DictionaryType. DictionaryType contains six subclasses: SpectralProfile, MaterialProperty, MaterialPalette, LightPointPalette, FeatureEncoding, and LightgroupLookup. Each subclass has a multiplicity of 0..∞. The Dictionary class has a multiplicity of 1..1. The DictionaryType class has a multiplicity of 1..1.</p>
type	DictionaryType
annotation	<p>documentation</p> <p>The data dictionary serves as a repository for information about parameter definitions and valid values of the parameters included in the data set. This information is used to create the connection between the data dictionary and datasets and can be used to automate the data ingest and update process.</p>

A.5 Complex Types

A.5.1 AggregationFieldType

complexType **AggregationFieldType**

diagram						
used by	elements	GenericRasterFileType/AggregationField GenericVectorType/AggregationField ModelFeatureType/ExternalReferences/ExternalReferenceFile				
attributes	Name	Type	Use	Default	Fixed	annotation
	DirectoryPath	xsd:string	required			documentation Path to the file location. This path is relative to the location of this XML file.
	Filename	xsd:string	required			documentation Filename with extension.
annotation	documentation Complex-type: fields within the vector feature file attribute table.					

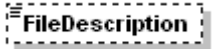
attribute **AggregationFieldType/@DirectoryPath**

type	xsd:string
annotation	documentation Path to the file location. This path is relative to the location of this XML file.

attribute **AggregationFieldType/@Filename**

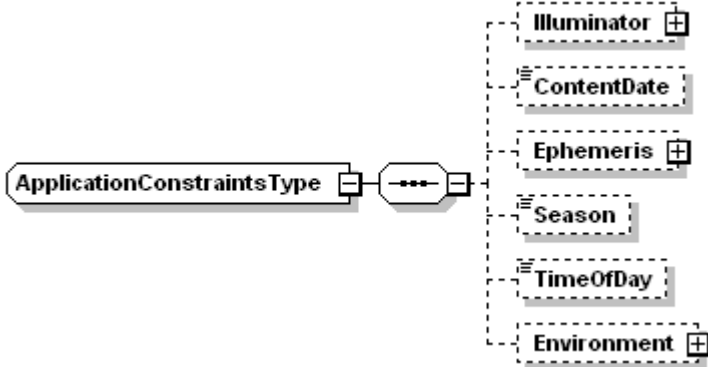
type	xsd:string
annotation	documentation Filename with extension.

element **AggregationFieldType/FileDescription**

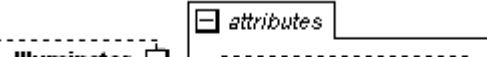
diagram	
annotation	documentation Description of the association of the aggregate files.

A.5.2 ApplicationConstraintsType

complexType **ApplicationConstraintsType**

diagram	
used by	element RasterChannelType/ApplicationConstraints
annotation	documentation Complex-type: describes the simulated conditions under which the channel is most valid.

element **ApplicationConstraintsType/Illuminator**

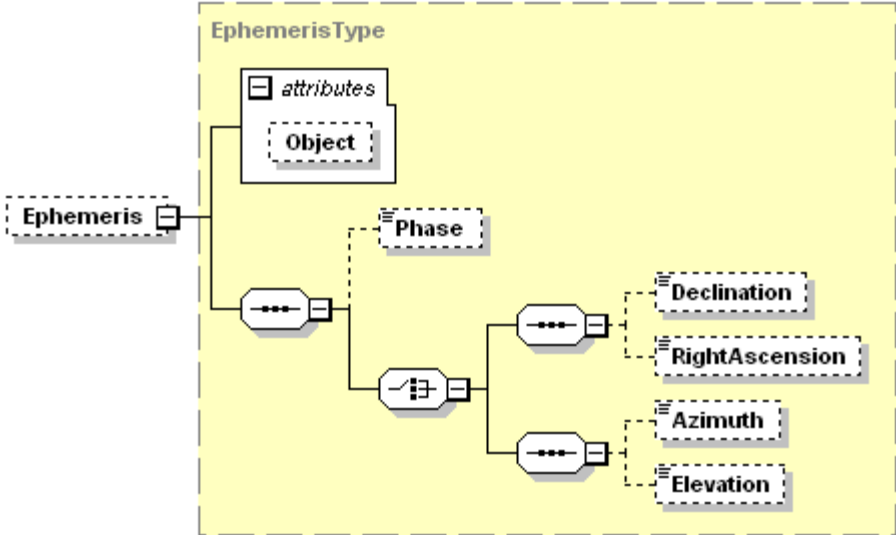
diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	SpectralProfileIDREF					

attribute **ApplicationConstraintsType/Illuminator/@SpectralProfileIDREF**

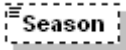
element **ApplicationConstraintsType/ContentDate**

diagram	
type	xsd:date

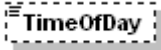
element **ApplicationConstraintsType/Ephemeris**

diagram	 <p>The diagram illustrates the structure of the EphemerisType element. It is a complex type containing several components: an Object attribute, a Phase element, and a choice of three elements: Declination, RightAscension, and Elevation. The Object attribute is shown as a box with a small square icon. The Phase element is shown as a box with a small square icon. The choice elements are shown as boxes with small square icons, each containing a choice of three elements: Declination, RightAscension, and Elevation. The Ephemeris element is shown as a box with a small square icon, connected to the Object attribute.</p>					
type	EphemerisType					
attributes	Name Object	Type derived by: xsd:string	Use	Default	Fixed	annotation
annotation	documentation Apparent positions of heavenly objects.					

element **ApplicationConstraintsType/Season**

diagram	 <p>The diagram shows the Season element as a box with a small square icon.</p>					
type	restriction of xsd:string					
facets	Kind enumeration	Value Summer	annotation			
	enumeration	Fall				
	enumeration	Winter				
	enumeration	Spring				

element **ApplicationConstraintsType/TimeOfDay**

diagram	 <p>The diagram shows the TimeOfDay element as a box with a small square icon.</p>					
type	xsd:time					

element **ApplicationConstraintsType/Environment**

diagram	
annotation	documentation (Future) Environmental conditions influencing the image.

element **ApplicationConstraintsType/Environment/Humidity**

diagram	
type	restriction of xsd:decimal

element **ApplicationConstraintsType/Environment/Visibility**

diagram	
type	restriction of xsd:decimal

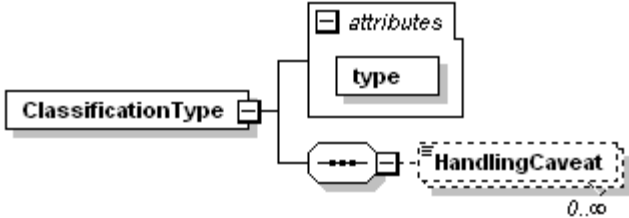
element **ApplicationConstraintsType/Environment/CloudLayer**

diagram	
type	xsd:string

A.5.3 ClassificationTypecomplexType **ClassificationType**

diagram	
used by	elements FileRefType/Classification NPSIBase/NPSIdentification/DatasetClassificationSummary
annotation	documentation Complex-type: handling restrictions imposed on the overall dataset or each data file for national security, privacy, or other concerns.

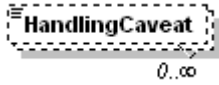
element **ClassificationType/ClassificationType**

diagram						
attributes	Name type	Type derived by: xsd:string	Use required	Default	Fixed	annotation documentation Name of the handling restrictions.

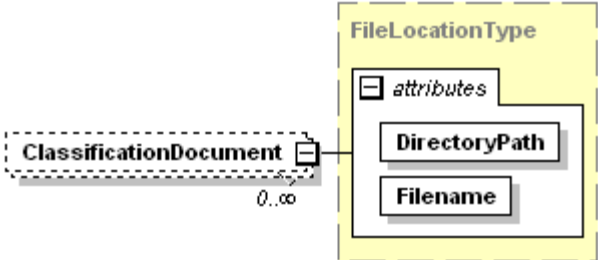
attribute **ClassificationType/ClassificationType/@type**

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	UNCLASS	
	enumeration	SECRET	
	enumeration	TOPSECRET	
	enumeration	CONFIDENTIAL	
	enumeration	UNKNOWN	
annotation	documentation Name of the handling restrictions.		

element **ClassificationType/ClassificationType/HandlingCaveat**

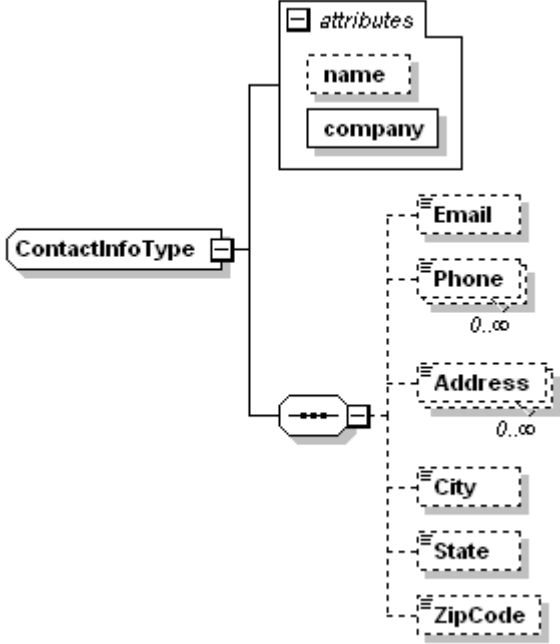
diagram			
type	restriction of xsd:string		
facets	Kind enumeration	Value FOUO	annotation
	enumeration	CNWDR	
	enumeration	LIMDIS	
	enumeration	ITAR	
	enumeration	EAR	
	enumeration	PROPIN	
	enumeration	NOFORN	
	enumeration	RESTRICTED	
annotation	documentation Additional information about the handling restrictions.		

element **ClassificationType/ClassificationDocument**

diagram						
type	FileLocationType					
attributes	Name DirectoryPath	Type xsd:string	Use required	Default	Fixed	annotation documentation Path to the file location. This path is relative to the location of this XML file. documentation Filename with extension.
	Filename	xsd:string	required			

A.5.4 ContactInfoType

complexType **ContactInfoType**

diagram						
used by	elements	SourceType/Author NPSIBase/NPSIdentification/DatasetAuthor NPSIBase/NPSIDistribution/DistributionGovernmentContact NPSIBase/NPSIDistribution/DistributionIndustryContact				
attributes	Name name	Type xsd:string	Use	Default	Fixed	annotation

	company xsd:string required
annotation	documentation Complex-type: identity of, and means to communicate with, person(s) and organization(s) associated with the data set.


attribute **ContactInfoType/@name**

type	xsd:string
------	-------------------

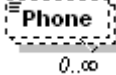
attribute **ContactInfoType/@company**

type	xsd:string
------	-------------------

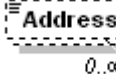
element **ContactInfoType/Email**

diagram	 A dashed rectangular box containing the word "Email".
type	xsd:string

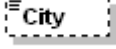
element **ContactInfoType/Phone**

diagram	 A dashed rectangular box containing the word "Phone". Below the box is the cardinality "0..∞".
type	xsd:string

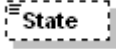
element **ContactInfoType/Address**

diagram	 A dashed rectangular box containing the word "Address". Below the box is the cardinality "0..∞".
type	xsd:string

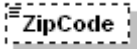
element **ContactInfoType/City**

diagram	 A dashed rectangular box containing the word "City".
type	xsd:string

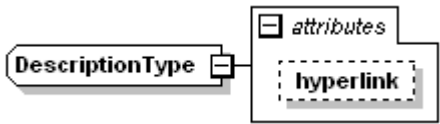
element **ContactInfoType/State**

diagram	 A dashed rectangular box containing the word "State".
type	xsd:string

element **ContactInfoType/ZipCode**

diagram	
type	restriction of xsd:string

A.5.5 DescriptionTypecomplexType **DescriptionType**

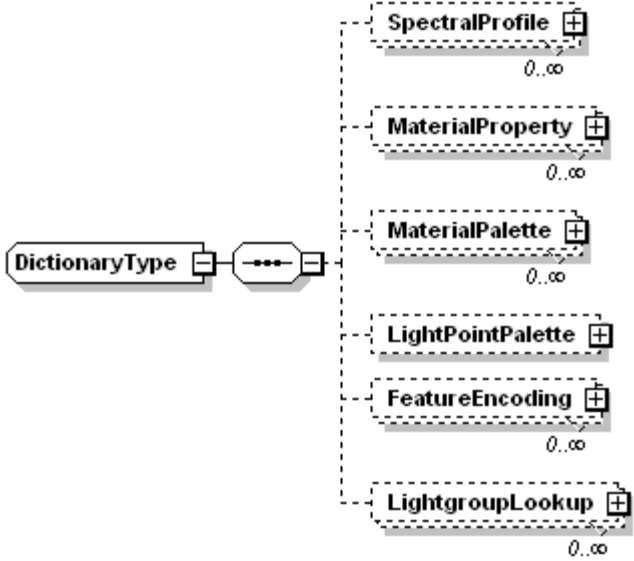
diagram						
type	extension of xsd:string					
used by	elements	NPSIBase/NPSIdentification/DatasetDescription GenericRasterFileType/Description GenericVectorType/Description ModelFeatureType/Description TextureFeatureType/Description DictionaryType/SpectralProfile/Description DictionaryType/MaterialProperty/Description				
attributes	Name	Type	Use	Default	Fixed	annotation
	hyperlink	xsd:string				
annotation	documentation Complex-type: description field for each dataset object (raster, vector, or model).					

attribute **DescriptionType/@hyperlink**

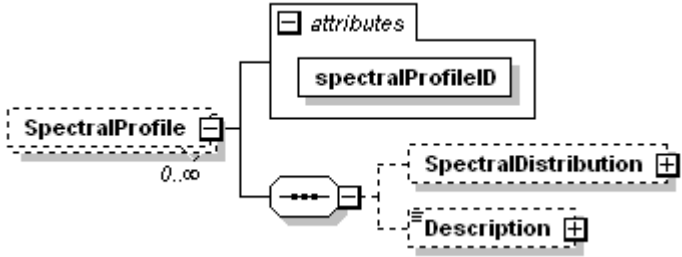
type	xsd:string
------	-------------------

A.5.6 DictionaryType

complexType DictionaryType

diagram	
used by	element NPSIBase/NPSIDataset/Dictionary
annotation	<p>documentation</p> <p>Complex-type: contains various references and definitions of "referenced-ID" being use in this metadata. Every item in the dictionary have a unique ID within the XML document defined in its attribute. The definition of the ID is in this dictionary, while the ID is being referenced by various other elements in the XML file.</p>

element DictionaryType/SpectralProfile

diagram						
attributes	Name spectralProfileID	Type derived by: xsd:ID	Use required	Default	Fixed	annotation
annotation	documentation SpectralProfile is a normalized/relative spectral definition of illuminating source or sensor response. The spectral distribution is represented by a Lookup Table or an external data file. The spectral distribution may also be represented by a black body temperature model.					

attribute DictionaryType/SpectralProfile/@spectralProfileID

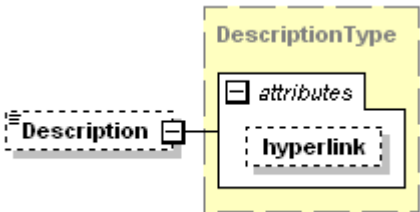
type	restriction of xsd:ID				
facets	Kind	Value	annotation		
	enumeration	NVG_ClassA			
	enumeration	NVG_ClassB			
	enumeration	NVG_ClassB_LeakyGreen			
	enumeration	GENERIC_SWIR			
	enumeration	ATFLIR_BLK1_EO			

	enumeration	ATFLIR_BLK1_IR
	enumeration	GENERIC_LLTV
	enumeration	GENERIC_3_5_IR
	enumeration	GENERIC_9_12_IR
	enumeration	GENERIC_SAR
	enumeration	LAMP_MERCURY_VAPOR
	enumeration	LAMP_LOW_PRESS_SODIUM
	enumeration	LAMP_HIGH_PRESS_SODIUM
	enumeration	QB_RED
	enumeration	QB_GREEN
	enumeration	QB_BLUE
	enumeration	QB_NIR
	enumeration	QB_PAN
	enumeration	IK_RED
	enumeration	IK_GREEN
	enumeration	IK_BLUE
	enumeration	IK_NIR
	enumeration	IK_PAN
	enumeration	L7_B10
	enumeration	L7_B20
	enumeration	L7_B30
	enumeration	L7_B40
	enumeration	L7_B50
	enumeration	L7_B61
	enumeration	L7_B62
	enumeration	L7_B70
	enumeration	L7_B80
	enumeration	IRS_PAN

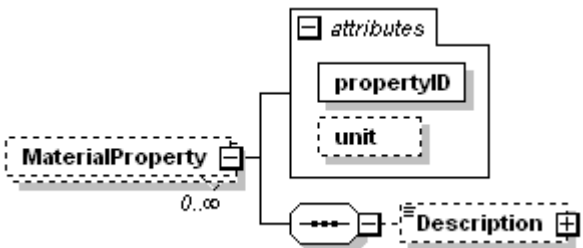
element DictionaryType/SpectralProfile/SpectralDistribution

diagram						
type	SpectralDistributionType					
attributes	Name Region	Type derived by: xsd:string	Use	Default	Fixed	annotation

element DictionaryType/SpectralProfile/Description

diagram						
type	DescriptionType					
attributes	Name hyperlink	Type xsd:string	Use	Default	Fixed	annotation

element DictionaryType/MaterialProperty

diagram						
attributes	Name propertyID unit	Type xsd:ID xsd:string	Use required	Default	Fixed	annotation

attribute DictionaryType/MaterialProperty/@propertyID

type	xsd:ID
------	---------------

attribute DictionaryType/MaterialProperty/@unit

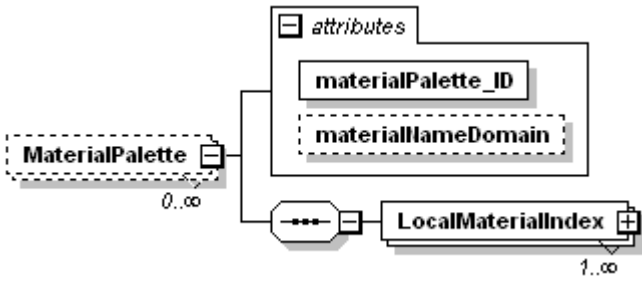
type	xsd:string
------	-------------------

element DictionaryType/MaterialProperty/Description

diagram						
type	DescriptionType					

attributes	Name hyperlink	Type xsd:string	Use	Default	Fixed	annotation
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element **DictionaryType/MaterialPalette**

diagram						
attributes	Name materialPalette_ID	Type xsd:ID	Use required	Default	Fixed	documentation Contains the ID of the material map table to be defined.
	materialNameDomain					documentation If standardized material name or ID is used, indicate the name domain or material library here. For example: MPRD, USGS, ASTER. etc.
annotation	documentation This table maps this dataset digital index values in the material class image (material ID) to globally defined MPRD_ID.					

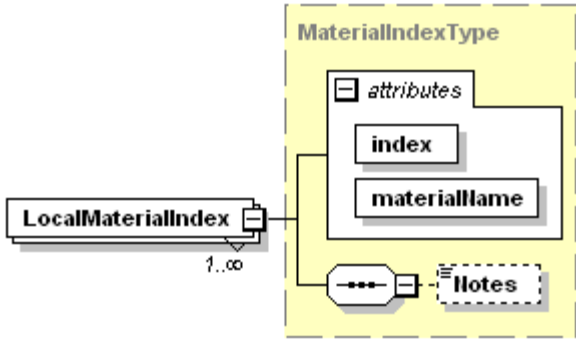
attribute **DictionaryType/MaterialPalette/@materialPalette_ID**

type	xsd:ID
annotation	documentation Contains the ID of the material map table to be defined.

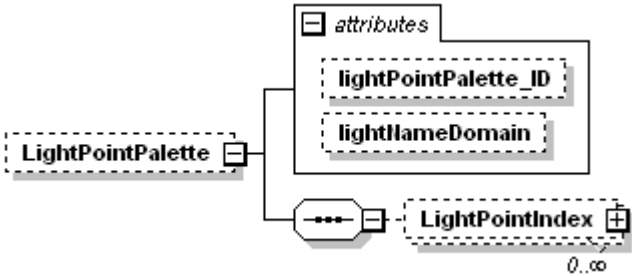
attribute **DictionaryType/MaterialPalette/@materialNameDomain**

annotation	documentation If standardized material name or ID is used, indicate the name domain or material library here. For example: MPRD, USGS, ASTER. etc.
------------	---

element DictionaryType/MaterialPalette/LocalMaterialIndex

diagram						
type	MaterialIndexType					
attributes	Name index	Type xsd:integer	Use required	Default	Fixed	annotation documentation Integer number that is encoded in the data. For example, is using raster pixel, this could be a value between 0 to 255.
	materialName		required			documentation Spell the material name or ID exactly as defined under the material library or domain.
annotation	documentation Maps an integer index to a material name defined by the material library or domain.					

element DictionaryType/LightPointPalette

diagram						
attributes	Name lightPointPalette_ID lightNameDomain	Type xsd:ID	Use	Default	Fixed	annotation documentation If standard light name or ID is used, indicate the name domain here. For example: CDB, LPRD, etc.

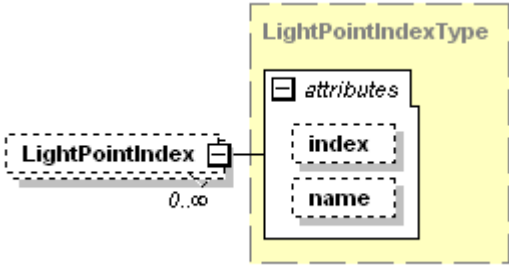
attribute DictionaryType/LightPointPalette/@lightPointPalette_ID

type	xsd:ID
------	--------

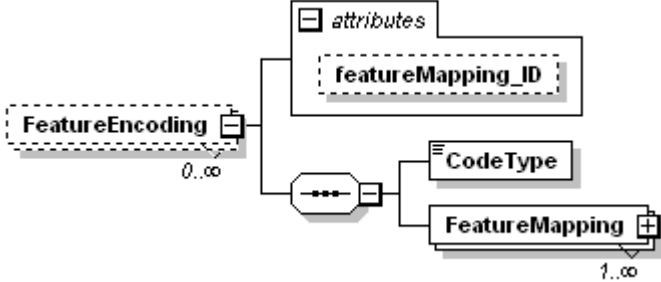
attribute DictionaryType/LightPointPalette/@lightNameDomain

annotation	documentation If standard light name or ID is used, indicate the name domain here. For example: CDB, LPRD, etc.
------------	--

element DictionaryType/LightPointPalette/LightPointIndex

diagram	 <p>The diagram shows a dashed box labeled 'LightPointIndex' with a cardinality of '0..∞'. This box is connected to a larger yellow box labeled 'LightPointIndexType'. Inside the yellow box is a smaller box labeled 'attributes' which contains two elements: 'index' and 'name', both in dashed boxes.</p>					
type	LightPointIndexType					
attributes	Name index	Type xsd:string	Use	Default	Fixed	annotation documentation Integer palette index of light point type.
	name	xsd:string				documentation Use standard light naming convention based on the light name domain.


element DictionaryType/FeatureEncoding

diagram	 <p>The diagram shows a dashed box labeled 'FeatureEncoding' with a cardinality of '0..∞'. This box is connected to a box labeled 'attributes' which contains a dashed box labeled 'featureMapping_ID'. Below the 'attributes' box is a box labeled 'CodeType' which is connected to a dashed box labeled 'FeatureMapping' with a cardinality of '1..∞'.</p>					
attributes	Name featureMapping_ID	Type xsd:ID	Use	Default	Fixed	annotation
annotation	documentation Vector feature code lookup table definition.					

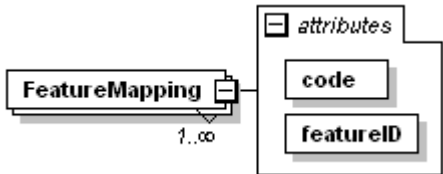
attribute **DictionaryType/FeatureEncoding/@featureMapping_ID**

type	xsd:ID
------	---------------

element **DictionaryType/FeatureEncoding/CodeType**

diagram			
type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	DFAD	
	enumeration	FAC	
	enumeration	EDD	
	enumeration	VMAP	
	enumeration	CUSTOM	
annotation	documentation Describes the domain of the feature types, i.e. standard DFAD feature codes, VMAP feature codes, or a custom lookup table.		

element **DictionaryType/FeatureEncoding/FeatureMapping**

diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	code	xsd:string	required			documentation The feature type from the vector feature file's CodeField.
	featureID	xsd:string	required			documentation Unique ID of a cultural feature file identified in the CultureFeatureData section of the metadata.
annotation	documentation List of vector feature type mappings.					

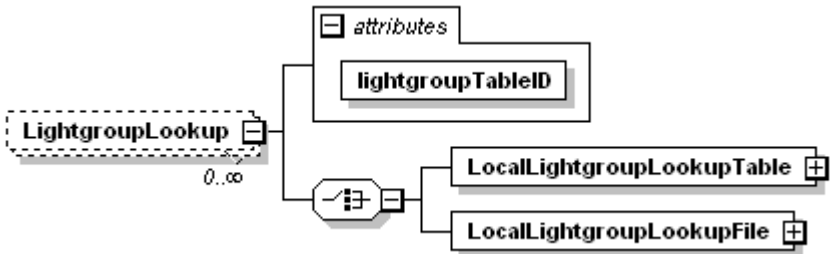
attribute **DictionaryType/FeatureEncoding/FeatureMapping/@code**

type	xsd:string
annotation	documentation The feature type from the vector feature file's CodeField.

attribute **DictionaryType/FeatureEncoding/FeatureMapping/@featureID**

type	xsd:string
annotation	documentation Unique ID of a cultural feature file identified in the CultureFeatureData section of the metadata.

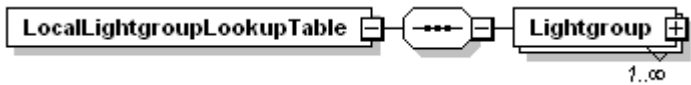
element DictionaryType/LightgroupLookup

diagram						
attributes	Name lightgroupTableID	Type xsd:ID	Use required	Default	Fixed	annotation
annotation	documentation Globally defined lightgroup lookup table.					

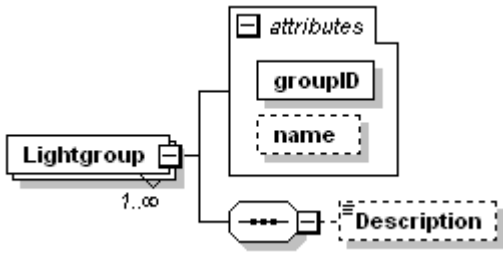
attribute DictionaryType/LightgroupLookup/@lightgroupTableID

type	xsd:ID
------	---------------

element DictionaryType/LightgroupLookup/LocalLightgroupLookupTable

diagram						
annotation	documentation Locally defined table of lightgroups and descriptions within XML document.					

element DictionaryType/LightgroupLookup/LocalLightgroupLookupTable/Lightgroup

diagram						
attributes	Name groupID	Type xsd:integer	Use required	Default	Fixed	annotation documentation Numerical ID used to control light group.
	name	xsd:string				documentation Name of light group, i.e. Landing Lights.
annotation	documentation Light control group.					

attribute DictionaryType/LightgroupLookup/LocalLightgroupLookupTable/Lightgroup/@groupID

type	xsd:integer
annotation	documentation Numerical ID used to control light group.

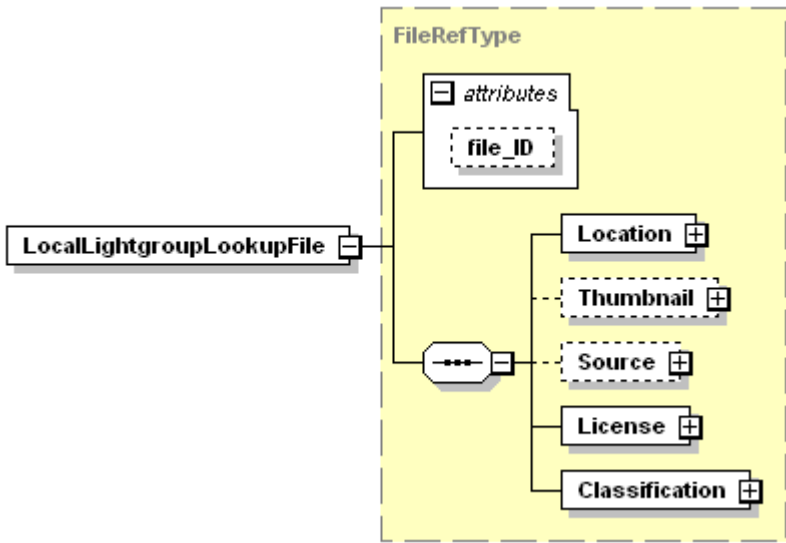
attribute DictionaryType/LightgroupLookup/LocalLightgroupLookupTable/Lightgroup/@name

type	xsd:string
annotation	documentation Name of light group, i.e. Landing Lights.

element DictionaryType/LightgroupLookup/LocalLightgroupLookupTable/Lightgroup/Description

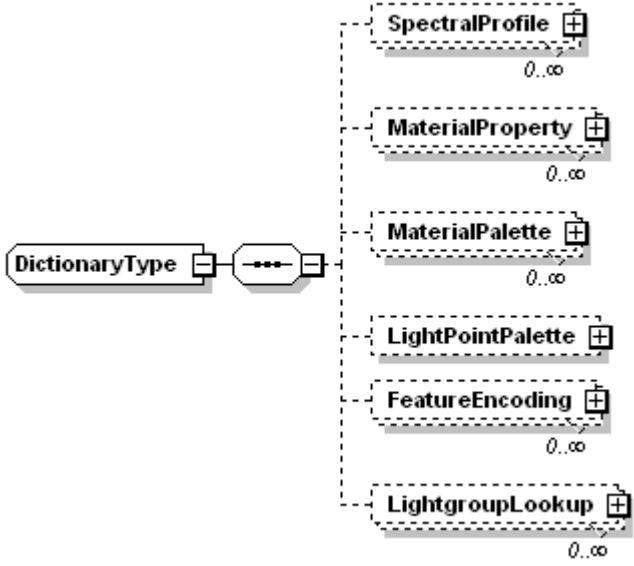
diagram	
type	xsd:string
annotation	documentation Description of the light group.

element DictionaryType/LightgroupLookup/LocalLightgroupLookupFile

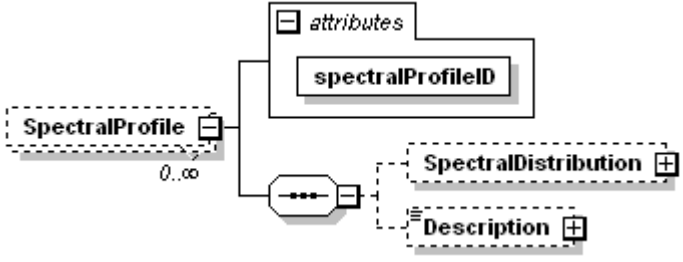
diagram						
type	FileRefType					
attributes	Name file_ID	Type xsd:ID	Use	Default	Fixed	annotation documentation File ID is required only if this file is being referenced within this document.
annotation	documentation Locally referenced lookup file external to the XML document.					

A.5.7 EphemerisType

complexType DictionaryType

diagram	
used by	element NPSIBase/NPSIDataset/Dictionary
annotation	<p>documentation</p> <p>Complex-type: contains various references and definitions of "referenced-ID" being use in this metadata. Every item in the dictionary have a unique ID within the XML document defined in its attribute. The definition of the ID is in this dictionary, while the ID is being referenced by various other elements in the XML file.</p>

element DictionaryType/SpectralProfile

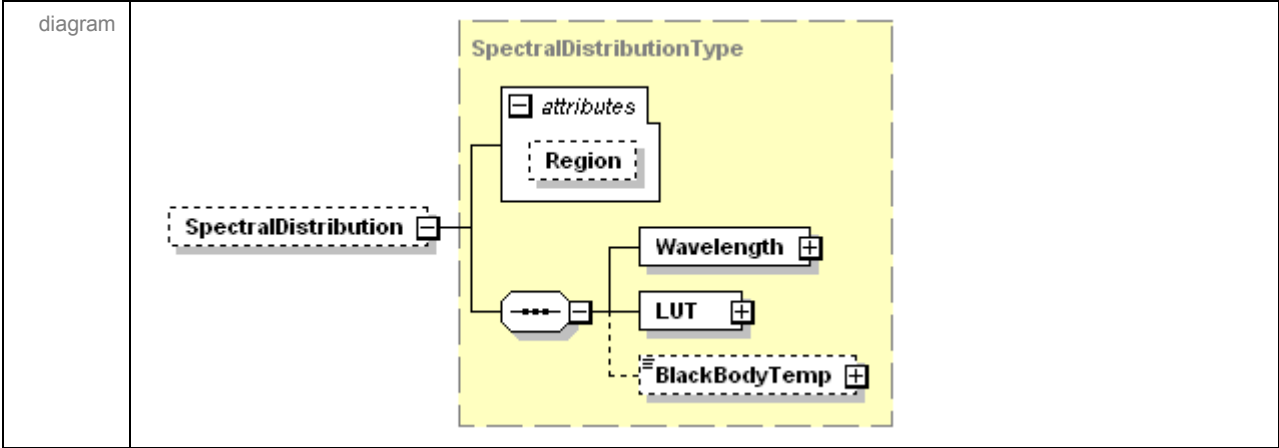
diagram						
attributes	Name spectralProfileID	Type derived by: xsd:ID	Use required	Default	Fixed	annotation
annotation	<p>documentation</p> <p>SpectralProfile is a normalized/relative spectral definition of illuminating source or sensor response. The spectral distribution is represented by a Lookup Table or an external data file. The spectral distribution may also be represented by a black body temperature model.</p>					

attribute DictionaryType/SpectralProfile/@spectralProfileID

type	restriction of xsd:ID				
facets	Kind enumeration	Value NVG_ClassA	annotation		
	enumeration	NVG_ClassB			

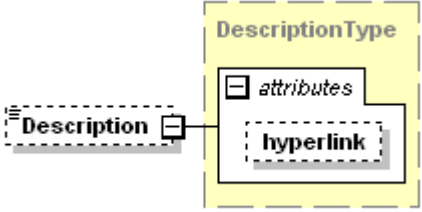
	enumeration	NVG_ClassB_LeakyGreen
	enumeration	GENERIC_SWIR
	enumeration	ATFLIR_BLK1_EO
	enumeration	ATFLIR_BLK1_IR
	enumeration	GENERIC_LDTV
	enumeration	GENERIC_3_5_IR
	enumeration	GENERIC_9_12_IR
	enumeration	GENERIC_SAR
	enumeration	LAMP_MERCURY_VAPOR
	enumeration	LAMP_LOW_PRESS_SODIUM
	enumeration	LAMP_HIGH_PRESS_SODIUM
	enumeration	QB_RED
	enumeration	QB_GREEN
	enumeration	QB_BLUE
	enumeration	QB_NIR
	enumeration	QB_PAN
	enumeration	IK_RED
	enumeration	IK_GREEN
	enumeration	IK_BLUE
	enumeration	IK_NIR
	enumeration	IK_PAN
	enumeration	L7_B10
	enumeration	L7_B20
	enumeration	L7_B30
	enumeration	L7_B40
	enumeration	L7_B50
	enumeration	L7_B61
	enumeration	L7_B62
	enumeration	L7_B70
	enumeration	L7_B80
	enumeration	IRS_PAN

element DictionaryType/SpectralProfile/SpectralDistribution

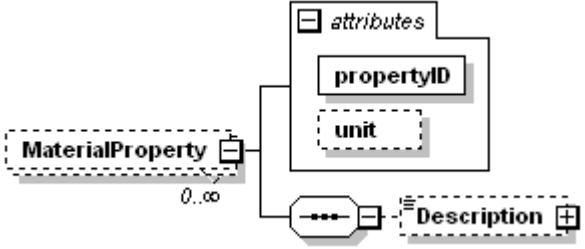


type	SpectralDistributionType					
attributes	Name Region	Type derived by: xsd:string	Use	Default	Fixed	annotation

element DictionaryType/SpectralProfile/Description

diagram						
type	DescriptionType					
attributes	Name hyperlink	Type xsd:string	Use	Default	Fixed	annotation

element DictionaryType/MaterialProperty

diagram						
attributes	Name propertyID unit	Type xsd:ID xsd:string	Use required	Default	Fixed	annotation

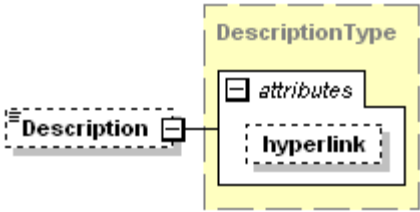
attribute DictionaryType/MaterialProperty/@propertyID

type	xsd:ID
------	--------

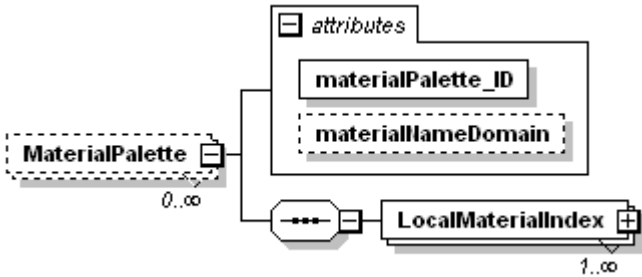
attribute DictionaryType/MaterialProperty/@unit

type	xsd:string
------	------------

element DictionaryType/MaterialProperty/Description

diagram						
type	DescriptionType					
attributes	Name hyperlink	Type xsd:string	Use	Default	Fixed	annotation

element DictionaryType/MaterialPalette

diagram						
attributes	Name materialPalette_ID materialNameDomain	Type xsd:ID	Use required	Default	Fixed	annotation documentation Contains the ID of the material map table to be defined. documentation If standardized material name or ID is used, indicate the name domain or material library here. For example: MPRD, USGS, ASTER. Etc.
annotation	documentation This table maps this dataset digital index values in the material class image (material ID) to globally defined MPRD_ID.					

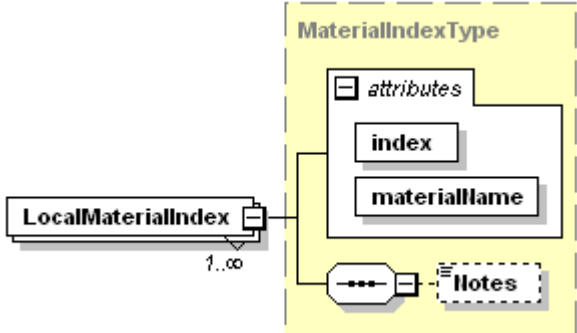
attribute DictionaryType/MaterialPalette/@materialPalette_ID

type	xsd:ID
annotation	documentation Contains the ID of the material map table to be defined.

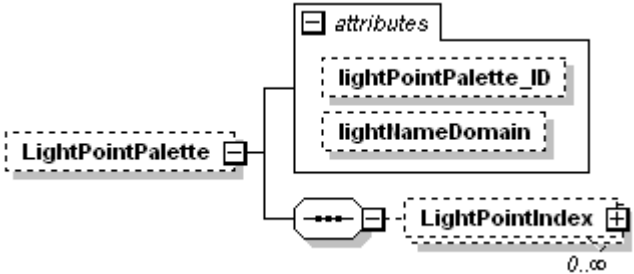
attribute DictionaryType/MaterialPalette/@materialNameDomain

annotation	documentation If standardized material name or ID is used, indicate the name domain or material library here. For example: MPRD, USGS, ASTER. etc.
------------	--

element DictionaryType/MaterialPalette/LocalMaterialIndex

diagram						
type	MaterialIndexType					
attributes	Name index	Type xsd:integer	Use required	Default	Fixed	annotation documentation Integer number that is encoded in the data. For example, is using raster pixel, this could be a value between 0 to 255.
	materialName		required			documentation Spell the material name or ID exactly as defined under the material library or domain.
annotation	documentation Maps an integer index to a material name defined by the material library or domain.					

element DictionaryType/LightPointPalette

diagram						
attributes	Name lightPointPalette_ID lightNameDomain	Type xsd:ID	Use	Default	Fixed	annotation documentation If standard

		light name or ID is used, indicate the name domain here. For example: CDB, LPRD, etc.
--	--	---

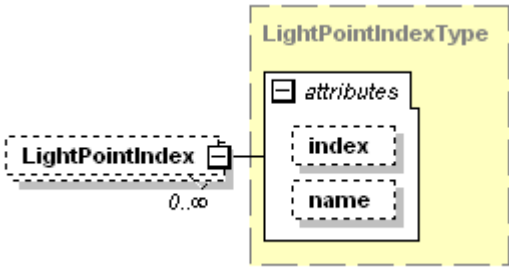
attribute DictionaryType/LightPointPalette/@lightPointPalette_ID

type	xsd:ID
------	--------

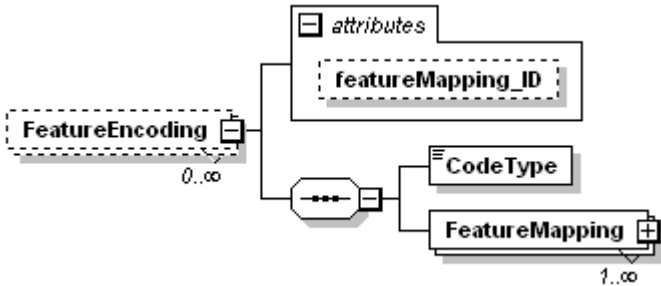
attribute DictionaryType/LightPointPalette/@lightNameDomain

annotation	documentation If standard light name or ID is used, indicate the name domain here. For example: CDB, LPRD, etc.
------------	--

element DictionaryType/LightPointPalette/LightPointIndex

diagram						
type	LightPointIndexType					
attributes	Name	Type	Use	Default	Fixed	annotation documentation Integer palette index of light point type. documentation Use standard light naming convention based on the light name domain.
	index	xsd:string				
	name	xsd:string				

element DictionaryType/FeatureEncoding


diagram						
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attributes	Name featureMapping_ID	Type xsd:ID	Use	Default	Fixed	annotation
annotation	documentation Vector feature code lookup table definition.					

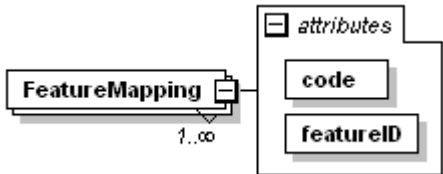
attribute DictionaryType/FeatureEncoding/@featureMapping_ID

type	xsd:ID
------	---------------

element DictionaryType/FeatureEncoding/CodeType

element CodeType per data encoding CodeType			
diagram			
type	restriction of xsd:string		
facets	Kind enumeration enumeration enumeration enumeration enumeration	Value DFAD FAC EDD VMAP CUSTOM	annotation
annotation	documentation Describes the domain of the feature types, i.e. standard DFAD feature codes, VMAP feature codes, or a custom lookup table.		

element DictionaryType/FeatureEncoding/FeatureMapping

diagram						
attributes	Name code	Type xsd:string	Use required	Default	Fixed	annotation documentation The feature type from the vector feature file's CodeField.
	featureID	xsd:string	required			documentation Unique ID of a cultural feature file identified in the CultureFeatureData section of the metadata.
annotation	documentation List of vector feature type mappings.					

attribute DictionaryType/FeatureEncoding/FeatureMapping/@code

type	xsd:string
annotation	documentation The feature type from the vector feature file's CodeField.

attribute **DictionaryType/FeatureEncoding/FeatureMapping/@featureID**

type	xsd:string
annotation	documentation Unique ID of a cultural feature file identified in the CultureFeatureData section of the metadata.

element **DictionaryType/LightgroupLookup**

diagram						
attributes	Name lightgroupTableID	Type xsd:ID	Use required	Default	Fixed	annotation
annotation	documentation Globally defined lightgroup lookup table.					

attribute **DictionaryType/LightgroupLookup/@lightgroupTableID**

type	xsd:ID
------	---------------

element **DictionaryType/LightgroupLookup/LocalLightgroupLookupTable**

diagram						
annotation	documentation Locally defined table of lightgroups and descriptions within XML document.					

element **DictionaryType/LightgroupLookup/LocalLightgroupLookupTable/Lightgroup**

diagram						
attributes	Name groupID	Type xsd:integer	Use required	Default	Fixed	annotation documentation Numerical ID used to control light group.
	name	xsd:string				documentation Name of light group, i.e. Landing

	Lights.
annotation	documentation Light control group.

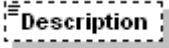
attribute DictionaryType/LightgroupLookup/LocalLightgroupLookupTable/Lightgroup/@groupID

type	xsd:integer
annotation	documentation Numerical ID used to control light group.

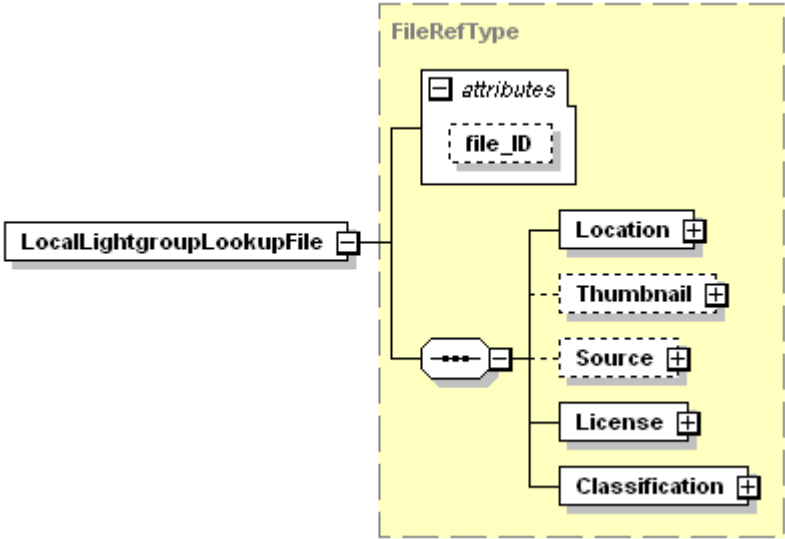
attribute DictionaryType/LightgroupLookup/LocalLightgroupLookupTable/Lightgroup/@name

type	xsd:string
annotation	documentation Name of light group, i.e. Landing Lights.

element DictionaryType/LightgroupLookup/LocalLightgroupLookupTable/Lightgroup/Description

diagram	
type	xsd:string
annotation	documentation Description of the light group.

element DictionaryType/LightgroupLookup/LocalLightgroupLookupFile

diagram						
type	FileRefType					
attributes	Name file_ID	Type xsd:ID	Use	Default	Fixed	annotation documentation File ID is required only if this file is being referenced within this document.

annotation	documentation Locally referenced lookup file external to the XML document.
------------	---

A.5.8 FeatureEncodingType


complexType **FeatureEncodingType**

diagram	
used by	element GenericVectorType/FeatureEncoding
annotation	documentation Complex-type: provides information for mapping cultural feature data types to vector features.

element **FeatureEncodingType/CodeField**

diagram	
type	xsd:string
annotation	documentation Name of the shapefield that contains feature ID.

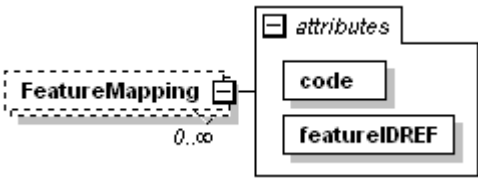
element **FeatureEncodingType/CodeType**

diagram			
type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	FACC	
	enumeration	FIC	
	enumeration	EDCS	
	enumeration	NEC	
	enumeration	TIGER	
	enumeration	AUTO	
	enumeration	CUSTOM	
annotation	documentation Describes the feature encoding standard for this shapefile, such as FACC, NEC or EDCS. If none of the standard code, use CUSTOM.		

element **FeatureEncodingType/FeatureMapping_IDREF**

diagram	 A dashed rectangular box containing the text "FeatureMapping_IDREF".
type	xsd:string

element **FeatureEncodingType/FeatureMapping**

diagram	 A diagram showing a dashed box labeled "FeatureMapping" with a small square icon to its right. A line connects this icon to a larger box labeled "attributes". Inside the "attributes" box are two smaller boxes: "code" and "featureIDREF". Below the "FeatureMapping" box is the text "0..∞".					
attributes	Name code	Type xsd:string	Use required	Default	Fixed	annotation documentation The feature type from the vector feature file's CodeField.
	featureIDREF	xsd:string	required			documentation Unique ID of a cultural feature file identified in the CultureFeatureData section of the metadata.
annotation	documentation List of vector feature type mappings to a specific feature model ID (OpenFlight).					

attribute **FeatureEncodingType/FeatureMapping/@code**

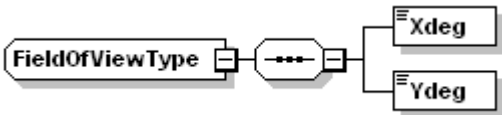
type	xsd:string
annotation	documentation The feature type from the vector feature file's CodeField.

attribute **FeatureEncodingType/FeatureMapping/@featureIDREF**

type	xsd:string
annotation	documentation Unique ID of a cultural feature file identified in the CultureFeatureData section of the metadata.

A.5.9 FieldOfViewType

complexType **FieldOfViewType**

diagram	 A diagram showing a rounded rectangular box labeled "FieldOfViewType" with a small square icon to its right. A line connects this icon to a hexagonal box containing three dots. From the right side of the hexagon, a line branches to two separate boxes: "Xdeg" and "Ydeg".
annotation	documentation Complex-type: Field of View definition in X and Y degrees.

element **FieldOfViewType/Xdeg**

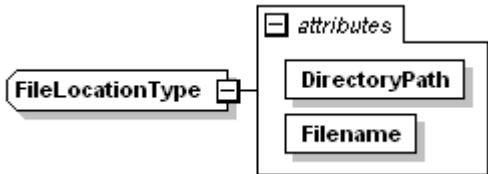
diagram	
---------	---

element **FieldOfViewType/Ydeg**

diagram	
---------	---

A.5.10 FileLocationType

complexType **FileLocationType**

diagram						
used by	elements	ClassificationType/ClassificationDocument PixelMappingType/LUT/File SpectralDistributionType/LUT/File LicenseType/LicenseDocument ModelFeatureType/Lightgroups/LocalLightgroupLookupFile FileRefType/Location FileRefType/Thumbnail				
attributes	Name	Type	Use	Default	Fixed	annotation
	DirectoryPath	xsd:string	required			documentation Path to the file location. This path is relative to the location of this XML file.
	Filename	xsd:string	required			documentation Filename with extension.
annotation	documentation Complex-type: file name and directory path information.					

attribute **FileLocationType/@DirectoryPath**

type	xsd:string
annotation	documentation Path to the file location. This path is relative to the location of this XML file.

attribute **FileLocationType/@Filename**

type	xsd:string
annotation	documentation Filename with extension.

A.5.11 FileRefType

complexType FileRefType

diagram						
used by	elements	GenericRasterFileType/BlendMethod/BlendMask/BlendMaskFile GenericRasterFileType/File GenericVectorType/File ModelFeatureType/File TextureFeatureType/File DictionaryType/LightgroupLookup/LocalLightgroupLookupFile				
attributes	Name	Type	Use	Default	Fixed	annotation
	file_ID	xsd:ID				documentation File ID is required only if this file is being referenced within this document.
annotation	documentation Complex-type: template for referencing a file. File information includes file location, thumbnail, author, classification and licenses.					

attribute FileRefType/@file_ID

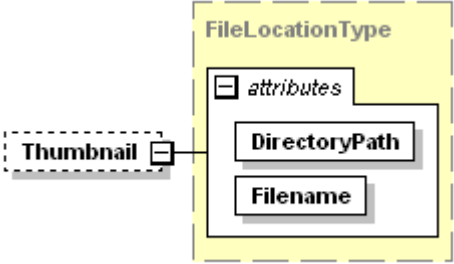
type	xsd:ID
annotation	documentation File ID is required only if this file is being referenced within this document.

element FileRefType/Location

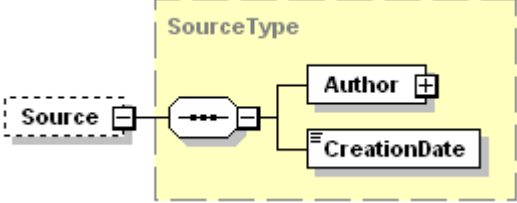
diagram						
type	FileLocationType					

attributes	<div><div>Name</div><div>DirectoryPath</div></div> <div><div>Type</div><div>xsd:string</div></div> <div><div>Use</div><div>required</div></div> <div><div>Default</div><div></div></div> <div><div>Fixed</div><div></div></div> <div><div>annotation</div><div>documentation</div><div>Path to the file location. This path is relative to the location of this XML file.</div></div> <div><div>documentation</div><div>Filename with extension.</div></div>
annotation	<div>documentation</div> <div>File directory path/location and filename.</div>

element FileRefType/Thumbnail

diagram	 <p>The diagram shows a dashed box labeled 'Thumbnail' connected by a line to a larger yellow box labeled 'FileLocationType'. Inside the 'FileLocationType' box, there is a sub-container labeled 'attributes' which contains two elements: 'DirectoryPath' and 'Filename'.</p>
type	FileLocationType
attributes	<div><div>Name</div><div>DirectoryPath</div></div> <div><div>Type</div><div>xsd:string</div></div> <div><div>Use</div><div>required</div></div> <div><div>Default</div><div></div></div> <div><div>Fixed</div><div></div></div> <div><div>annotation</div><div>documentation</div><div>Path to the file location. This path is relative to the location of this XML file.</div></div> <div><div>documentation</div><div>Filename with extension.</div></div>
annotation	<div>documentation</div> <div>Optional thumbnail location and filename for file browsing.</div>

element FileRefType/Source

diagram	 <p>The diagram shows a dashed box labeled 'Source' connected by a line to a larger yellow box labeled 'SourceType'. Inside the 'SourceType' box, there is a sub-container with a dashed border containing two elements: 'Author' and 'CreationDate'.</p>
type	SourceType
annotation	<div>documentation</div> <div>Producer of this file and creation date.</div>

element **FileRefType/License**

diagram	<p>The diagram shows a 'License' element connected to a 'LicenseType' container. Inside the 'LicenseType' container, there is a 'LicenseType' box and a dashed 'LicenseDocument' box. The 'LicenseDocument' box has a multiplicity of '0..∞'.</p>
type	LicenseType
annotation	documentation Restrictions and legal prerequisites for accessing and using this file if different than the overall dataset licensing.

element **FileRefType/Classification**

diagram	<p>The diagram shows a 'Classification' element connected to a 'ClassificationType' container. Inside the 'ClassificationType' container, there is a 'ClassificationType' box and a dashed 'ClassificationDocument' box. The 'ClassificationDocument' box has a multiplicity of '0..∞'.</p>
type	ClassificationType
annotation	documentation Handling restrictions imposed on this file for national security, privacy, or other concerns.

A.5.12 GenericRasterFileType

complexType **GenericRasterFileType**

diagram						
used by	element	NPSIBase/NPSIDataset/RasterData/RasterFile				
attributes	Name	Type	Use	Default	Fixed	annotation
	raster_type	derived by: xsd:string				documentation Type of raster data application: ALPHA_MASK, OTW, TEXTURE, REFLECTIVITY, WATER_MASK, ELEVATION, COLOR, MULTISPECTRAL, HYPERSPECTRAL, REFLECTION, RADIANCE, MATERIAL_INDEX, and MATERIAL_PROPERTY.
	raster_priority	xsd:int				documentation An integer that defines the build order of the raster data files. This number should be unique for each raster file. The lowest number will be built first and is often considered background. The highest number will always be present.
annotation	documentation Complex-type: template for raster type file. This type can be used for Raster data such as Elevation, OTW, masks, textures, etc.					

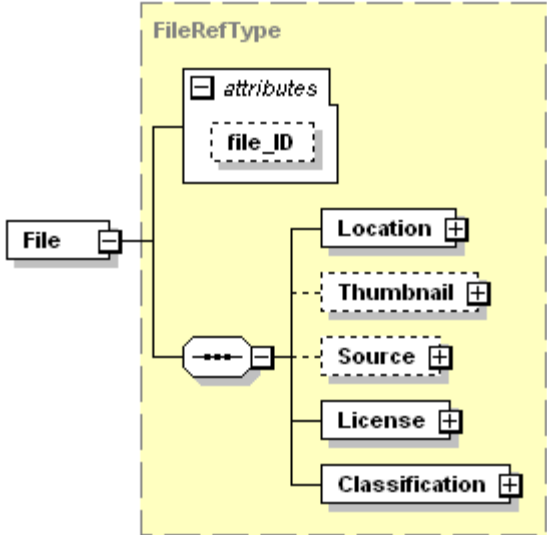
attribute **GenericRasterFileType/@raster_type**

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	OTW	
	enumeration	WATER_MASK	
	enumeration	ALPHA_MASK	
	enumeration	ELEVATION	
	enumeration	TEXTURE	
	enumeration	REFLECTIVITY	
	enumeration	RADIANCE	
	enumeration	IRRADIANCE	
	enumeration	MATERIAL_INDEX	
	enumeration	MATERIAL_PROPERTY	
	enumeration	HORIZON_MAP	
	enumeration	REFLECTION	
	enumeration	AERIAL_SOURCE	
	enumeration	LANDSAT7_SOURCE	
	enumeration	QUICKBIRD_SOURCE	
	enumeration	IRS_SOURCE	
	enumeration	IKONOS_SOURCE	
	enumeration	ORTHO	
	enumeration	HYPERSPECTRAL	
	enumeration		
annotation	documentation Type of raster data application: ALPHA_MASK, OTW, TEXTURE, REFLECTIVITY, WATER_MASK. ELEVATION, COLOR, MULTISPECTRAL, HYPERSPECTRAL, REFLECTION, RADIANCE, MATERIAL_INDEX, and MATERIAL_PROPERTY.		

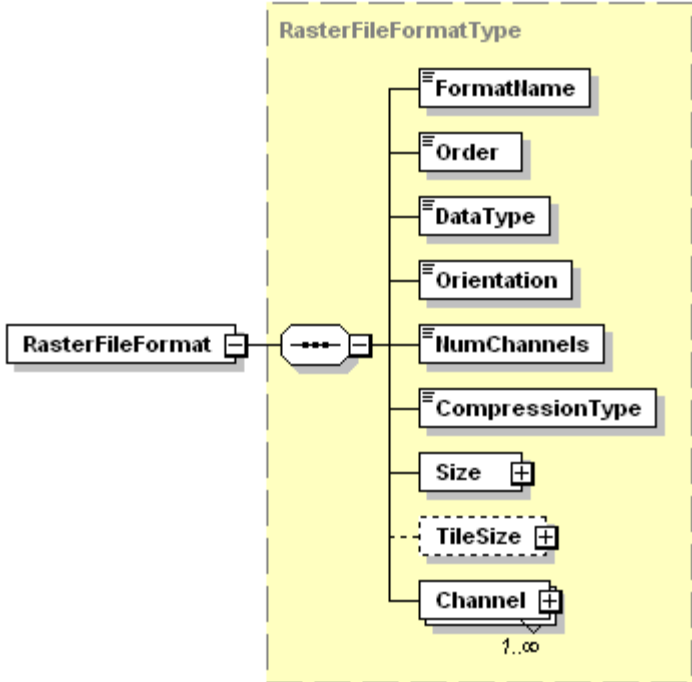
attribute **GenericRasterFileType/@raster_priority**

type	xsd:int
annotation	documentation An integer that defines the build order of the raster data files. This number should be unique for each raster file. The lowest number will be built first and is often considered background. The highest number will always be present.

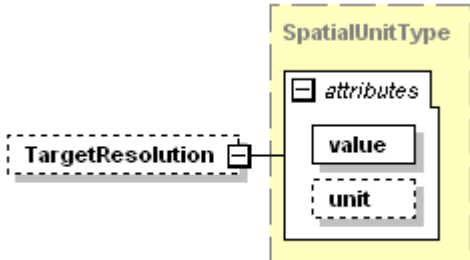
element **GenericRasterFileType/File**

diagram	 <p>The diagram illustrates the structure of the FileRefType element. A central box labeled 'File' is connected to a larger box labeled 'FileRefType'. Inside 'FileRefType', there is an 'attributes' box containing 'file_ID'. A connector box with three dots is connected to 'FileRefType' and branches into five boxes: 'Location', 'Thumbnail', 'Source', 'License', and 'Classification'. 'Thumbnail' is shown with a dashed border, indicating it is optional.</p>					
type	FileRefType					
attributes	Name file_ID	Type xsd:ID	Use	Default	Fixed	annotation documentation File ID is required only if this file is being referenced within this document.
annotation	documentation File identification information.					

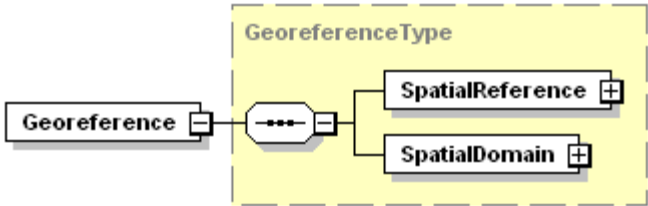
element **GenericRasterFileType/RasterFileFormat**

diagram	 <p>The diagram illustrates the structure of the RasterFileFormatType element. It is a complex type containing several attributes and elements. The attributes, indicated by a double horizontal line on the left, are: FormatName, Order, DataType, Orientation, NumChannels, and CompressionType. The elements are: Size (indicated by a plus sign in a box), TileSize (indicated by a plus sign in a dashed box), and Channel (indicated by a plus sign in a box). The Channel element has a cardinality of 1..∞. The entire structure is enclosed in a dashed yellow box labeled RasterFileFormatType.</p>
type	RasterFileFormatType
annotation	documentation File spatial information.

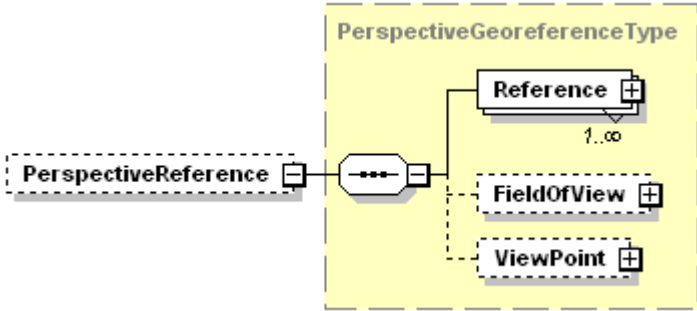
element **GenericRasterFileType/TargetResolution**

diagram	 <p>The diagram illustrates the structure of the SpatialUnitType element. It is a complex type containing an attribute and two elements. The attribute, indicated by a double horizontal line on the left, is value. The elements are unit (indicated by a plus sign in a dashed box) and unit (indicated by a plus sign in a box). The entire structure is enclosed in a dashed yellow box labeled SpatialUnitType.</p>					
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation
annotation	documentation Intended resolution for runtime application.					

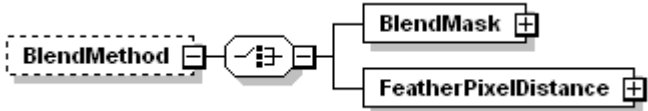
element **GenericRasterFileType/Georeference**

diagram	 <p>The diagram shows a Georeference element connected to a GeoreferenceType container. Inside the container, there are two sub-elements: SpatialReference and SpatialDomain, both marked with a plus sign (+).</p>
type	GeoreferenceType

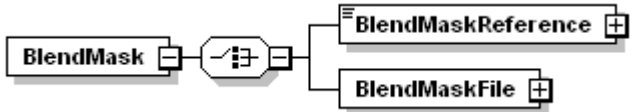
element **GenericRasterFileType/PerspectiveReference**

diagram	 <p>The diagram shows a PerspectiveReference element connected to a PerspectiveGeoreferenceType container. Inside the container, there are three sub-elements: Reference (marked with a plus sign +), FieldOfView (marked with a plus sign +), and ViewPoint (marked with a plus sign +). A multiplicity of 1..∞ is indicated near the Reference element.</p>
type	PerspectiveGeoreferenceType
annotation	documentation Georeferencing structure for perspective images. The structure here allow for referencing multiple 3-D perspective reference points relative to the viewer origin/location.

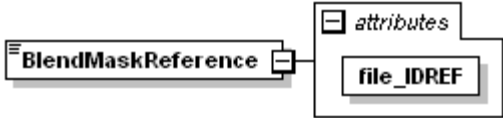
element **GenericRasterFileType/BlendMethod**

diagram	 <p>The diagram shows a BlendMethod element connected to a container. Inside the container, there are two sub-elements: BlendMask (marked with a plus sign +) and FeatherPixelDistance (marked with a plus sign +).</p>
annotation	documentation Use if this raster data requires blending using either a blend mask file or feather region.

element **GenericRasterFileType/BlendMethod/BlendMask**

diagram	 <p>The diagram shows a BlendMask element connected to a container. Inside the container, there are two sub-elements: BlendMaskReference (marked with a plus sign +) and BlendMaskFile (marked with a plus sign +).</p>
annotation	documentation Apply blend mask from the specified raster file. The file could be referenced in this document as Raster Alpha channel.

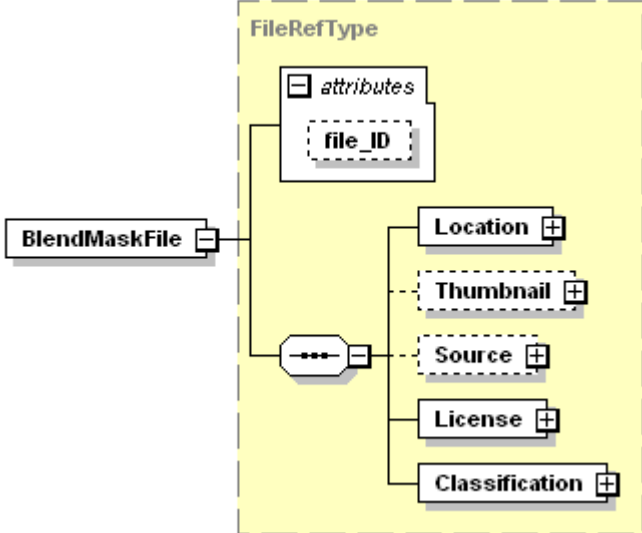
element **GenericRasterFileType/BlendMethod/BlendMask/BlendMaskReference**

diagram	 The diagram shows a box labeled 'BlendMaskReference' with a small square icon to its right. This icon is connected to a larger box labeled 'file_IDREF'. Above the 'file_IDREF' box is a smaller box labeled 'attributes' with a minus sign icon.					
type	extension of xsd:IDREF					
attributes	Name file_IDREF	Type xsd:IDREF	Use required	Default	Fixed	annotation

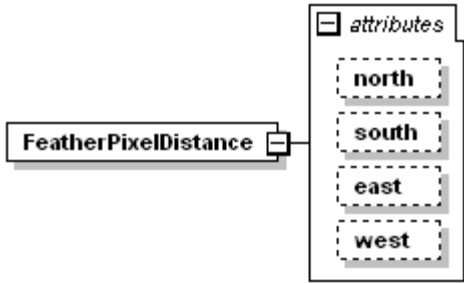
attribute **GenericRasterFileType/BlendMethod/BlendMask/BlendMaskReference/@file_IDREF**

type	xsd:IDREF
------	------------------

element **GenericRasterFileType/BlendMethod/BlendMask/BlendMaskFile**

diagram	 The diagram shows a box labeled 'BlendMaskFile' with a small square icon to its right. This icon is connected to a larger box labeled 'FileRefType'. Inside the 'FileRefType' box, there is a smaller box labeled 'attributes' with a minus sign icon, which contains a box labeled 'file_ID'. To the right of the 'attributes' box, there is a vertical stack of boxes: 'Location', 'Thumbnail', 'Source', 'License', and 'Classification'. Each of these boxes has a plus sign icon to its right. A dashed line connects the 'BlendMaskFile' icon to the 'file_ID' box. A dashed line also connects the 'BlendMaskFile' icon to the 'Source' box. A dashed line connects the 'BlendMaskFile' icon to the 'License' box. A dashed line connects the 'BlendMaskFile' icon to the 'Classification' box.					
type	FileRefType					
attributes	Name file_ID	Type xsd:ID	Use	Default	Fixed	annotation documentation File ID is required only if this file is being referenced within this document.

element **GenericRasterFileType/BlendMethod/FeatherPixelDistance**

diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	north	xsd:int				
	south	xsd:int				
	east	xsd:int				
	west	xsd:int				
annotation	documentation Apply transparency to this image using the pixel distances defined here. Transition from transparent to opaque over these distances.					

attribute **GenericRasterFileType/BlendMethod/FeatherPixelDistance/@north**

type	xsd:int
------	---------

attribute **GenericRasterFileType/BlendMethod/FeatherPixelDistance/@south**

type	xsd:int
------	---------

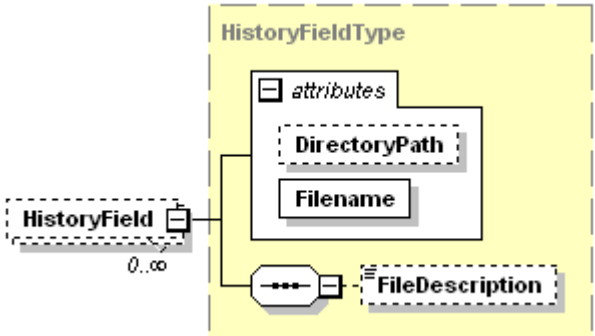
attribute **GenericRasterFileType/BlendMethod/FeatherPixelDistance/@east**

type	xsd:int
------	---------

attribute **GenericRasterFileType/BlendMethod/FeatherPixelDistance/@west**

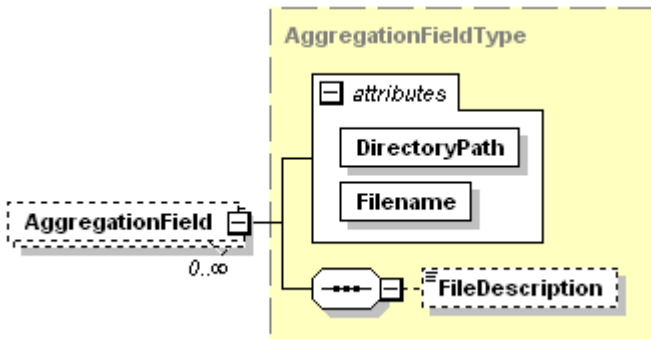
type	xsd:int
------	---------

element **GenericRasterFileType/HistoryField**

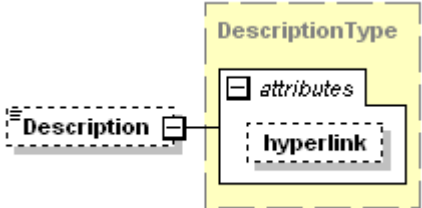
diagram						
---------	---	--	--	--	--	--

type	HistoryFieldType					
attributes	Name DirectoryPath	Type xsd:string	Use optional	Default	Fixed	annotation documentation Path to the file location. This could be URL, relative, or absolute path. documentation Filename with extension.
	Filename	xsd:string	required			
annotation	documentation List of fields within the vector feature file attribute table.					

element **GenericRasterFileType/AggregationField**

diagram						
type	AggregationFieldType					
attributes	Name DirectoryPath	Type xsd:string	Use required	Default	Fixed	annotation documentation Path to the file location. This path is relative to the location of this XML file.
	Filename	xsd:string	required			documentation Filename with extension.
annotation	documentation List files associates with the Raster data file that are not listed as another RasterFile.					

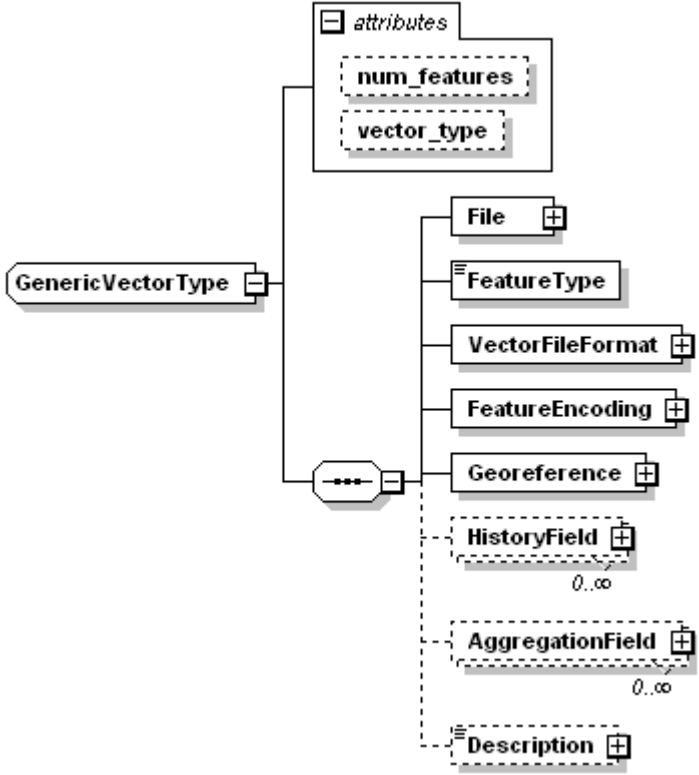
element **GenericRasterFileType/Description**

diagram						
type	DescriptionType					
attributes	Name hyperlink	Type xsd:string	Use	Default	Fixed	annotation
annotation	documentation					

	Description of this raster data. The text for this description may be referenced in the hyperlink attribute.
--	--

A.5.13 GenericVectorType

complexType **GenericVectorType**

diagram						
used by	element	NPSIBase/NPSIDataset/VectorData/FeatureVectorFile				
attributes	Name	Type	Use	Default	Fixed	annotation
	num_features					documentation Total number of features within the vector feature file.
	vector_type	derived by: xsd:string				documentation The type of vector: point, linear, or areal.
annotation	documentation Complex-type: template for feature vector file.					

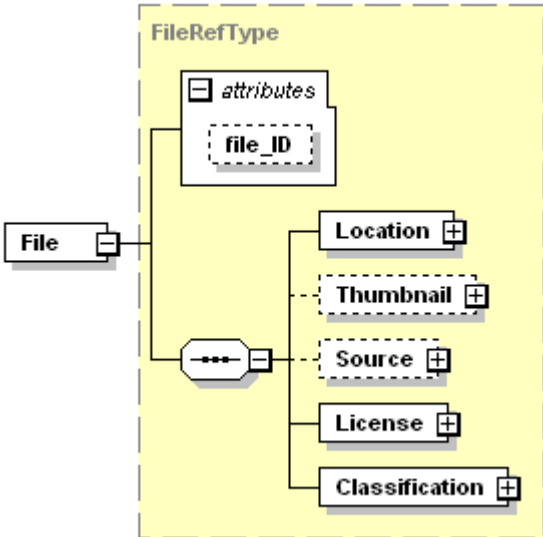
attribute **GenericVectorType/@num_features**

annotation	documentation Total number of features within the vector feature file.
------------	---


attribute **GenericVectorType/@vector_type**

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	POINT	
	enumeration	LINEAR	
enumeration		AREAL	
annotation	documentation The type of vector: point, linear, or areal.		

element **GenericVectorType/File**

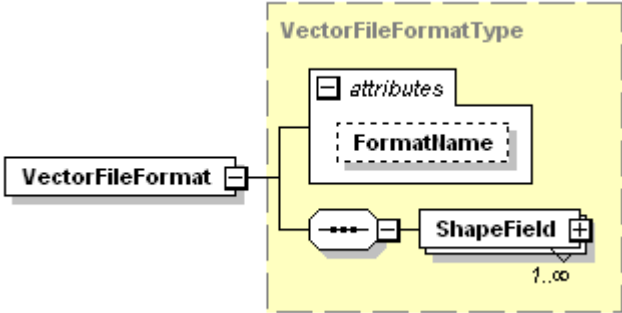
diagram	 <p>The diagram illustrates the structure of the FileRefType element. It is a container for several components: a File element, a file_ID attribute (indicated by a dashed box), and a group of optional elements (indicated by a dashed box and a circle with a plus sign). The optional elements include Location, Thumbnail, Source, License, and Classification, each represented by a box with a plus sign.</p>					
type	FileRefType					
attributes	Name file_ID	Type xsd:ID	Use	Default	Fixed	annotation documentation File ID is required only if this file is being referenced within this document.
annotation	documentation Physical location of vector feature file.					

element **GenericVectorType/FeatureType**

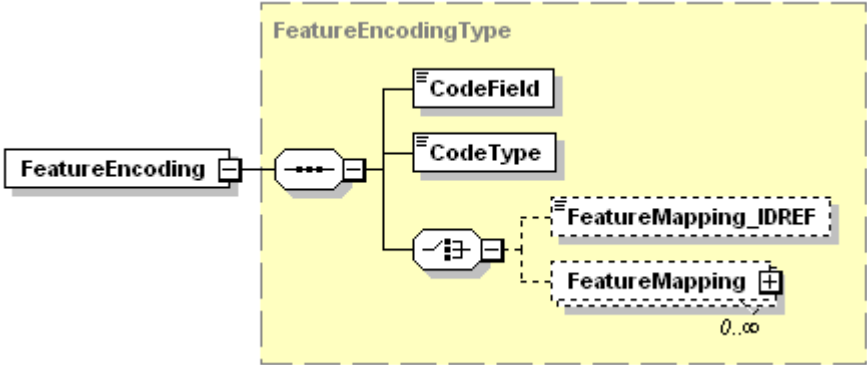
diagram	 <p>The diagram shows the FeatureType element as a simple box with the label 'FeatureType'.</p>				
type	restriction of xsd:string				
facets	Kind	Value	annotation		
	enumeration	CULTURAL_SCATTER			
	enumeration	GEOSPECIFIC			
	enumeration	COASTLINE			
	enumeration	POWERLINE			
	enumeration	RAILROAD			

	enumeration	ROAD
	enumeration	WATER_BODY
	enumeration	PIPELINE
	enumeration	TEXTURE
	enumeration	TREE_CANOPY
	enumeration	CULTURAL_LIGHTS
	enumeration	AIRFIELD
	enumeration	BUILDING_FOOTPRINT
	enumeration	GEOTYPICAL
annotation	documentation	Describes the intended purpose of the vector feature file, i.e. cultural feature scatter, geospecific features, tree canopies, water bodies, etc.

element GenericVectorType/VectorFileFormat

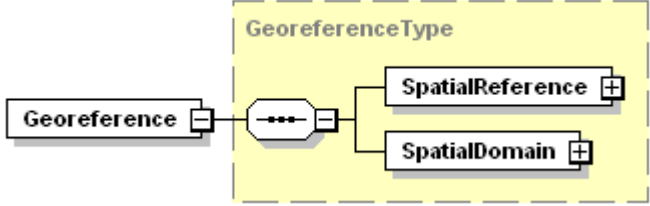
diagram	 <p>The diagram shows a box labeled 'VectorFileFormat' connected to a larger box labeled 'VectorFileFormatType'. Inside 'VectorFileFormatType', there is an 'attributes' section containing a 'FormatName' field. Below this, there is a 'ShapeField' box with a multiplicity of '1..∞'.</p>					
type	VectorFileFormatType					
attributes	Name FormatName	Type derived by: xsd:string	Use	Default	Fixed	annotation documentation Vector feature file type (currently restricted to ESRI shapefile).
annotation	documentation Contains vector feature file format.					

element GenericVectorType/FeatureEncoding

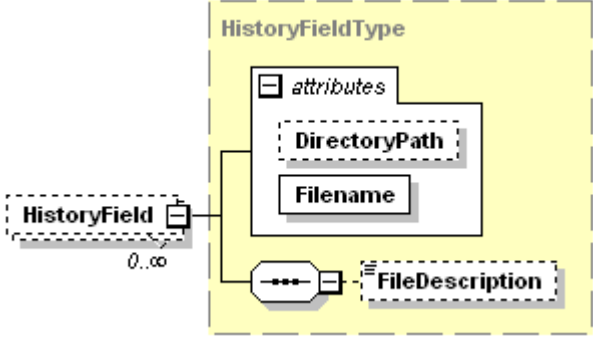
diagram	 <p>The diagram shows a box labeled 'FeatureEncoding' connected to a larger box labeled 'FeatureEncodingType'. Inside 'FeatureEncodingType', there are three main components: 'CodeField', 'CodeType', and a group containing 'FeatureMapping_IDREF' and 'FeatureMapping'. The 'FeatureMapping' box has a multiplicity of '0..∞'.</p>					
type	FeatureEncodingType					

annotation	documentation Provides information for mapping cultural feature data types to vector features.
------------	---

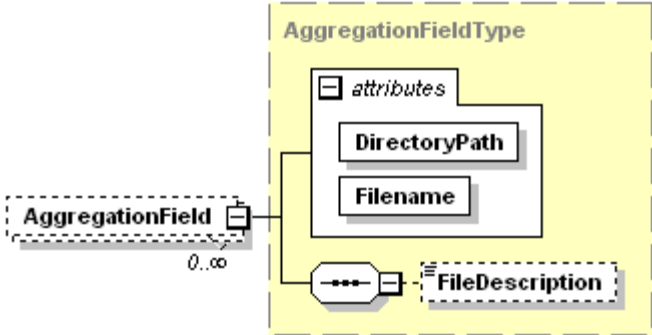
element **GenericVectorType/Georeference**

diagram	 <p>The diagram shows a Georeference element connected to a container labeled GeoreferenceType. Inside this container, there are two sub-elements: SpatialReference and SpatialDomain, both marked with a plus sign (+) indicating they are optional.</p>
type	GeoreferenceType
annotation	documentation Geographic reference information of the location and extent of the vector.

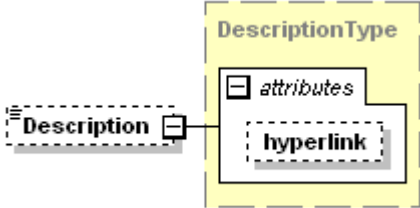
element **GenericVectorType/HistoryField**

diagram	 <p>The diagram shows a HistoryField element connected to a container labeled HistoryFieldType. Inside this container, there is a sub-element attributes which contains DirectoryPath and Filename. Below attributes, there is a FileDescription element. The HistoryField element has a cardinality of 0..∞.</p>					
type	HistoryFieldType					
attributes	Name	Type	Use	Default	Fixed	annotation
	DirectoryPath	xsd:string	optional			documentation Path to the file location. This could be URL, relative, or absolute path.
	Filename	xsd:string	required			documentation Filename with extension.
annotation	documentation List of fields within the vector feature file attribute table.					

element **GenericVectorType/AggregationField**

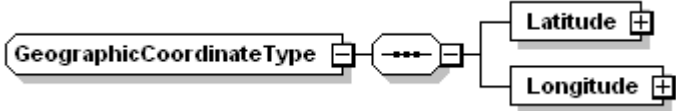
diagram	 <p>The diagram shows an AggregationField element (dashed box) with a cardinality of 0..∞. It is connected to an AggregationFieldType (yellow box). Inside this type, there is an attributes container (dashed box) which contains DirectoryPath and Filename elements. Additionally, there is a FileDescription element (dashed box) connected to the main type via a choice connector (oval with dots).</p>					
type	AggregationFieldType					
attributes	Name DirectoryPath	Type xsd:string	Use required	Default	Fixed	annotation documentation Path to the file location. This path is relative to the location of this XML file.
	Filename	xsd:string	required			documentation Filename with extension.
annotation	documentation List files associates with the Vector data shape file.					

element **GenericVectorType/Description**

diagram	 <p>The diagram shows a Description element (dashed box) connected to a DescriptionType (yellow box). Inside this type, there is an attributes container (dashed box) which contains a hyperlink element (dashed box).</p>					
type	DescriptionType					
attributes	Name hyperlink	Type xsd:string	Use	Default	Fixed	annotation
annotation	documentation Description of this vector data. The text for this description may be referenced in the hyperlink attribute.					

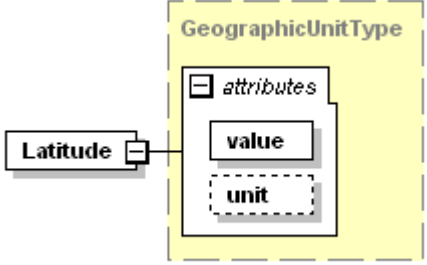
A.5.14 [GeographicCoordinateType](#)

complexType **GeographicCoordinateType**

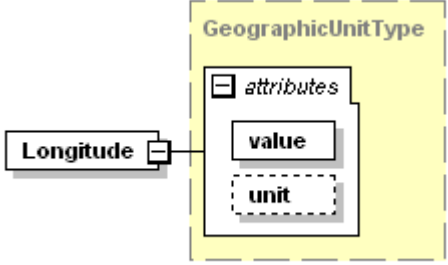
diagram	 <p>The diagram shows the GeographicCoordinateType (rounded rectangle) connected via a choice connector (oval with dots) to two elements: Latitude and Longitude, both with plus signs indicating optional elements.</p>					
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used by	elements GeoreferenceType/SpatialDomain/LowerLeft GeoreferenceType/SpatialDomain/LowerRight ModelFeatureType/ModelOrigin GeoreferenceType/SpatialDomain/UpperLeft GeoreferenceType/SpatialDomain/UpperRight
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element **GeographicCoordinateType/Latitude**

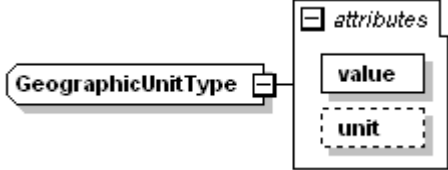
diagram						
type	GeographicUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

element **GeographicCoordinateType/Longitude**

diagram						
type	GeographicUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

A.5.15 GeographicUnitType

complexType **GeographicUnitType**

diagram						
used by	elements GeographicCoordinateType/Latitude GeographicCoordinateType/Longitude					

attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation
annotation	documentation Complex-type: per-pixel size in spatial unit					

attribute **GeographicUnitType/@value**

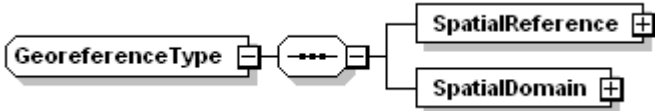
type	xsd:double
------	-------------------

attribute **GeographicUnitType/@unit**

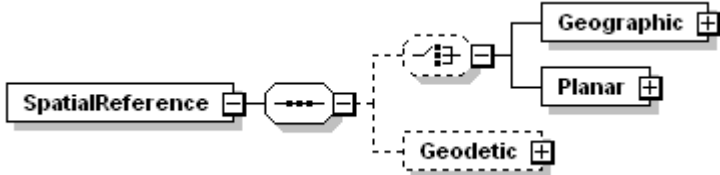
type	restriction of xsd:string				
facets	Kind enumeration	Value DEGREES_LATLON	annotation		

A.5.16 GeoreferenceType

complexType **GeoreferenceType**

diagram					
used by	elements	GenericRasterFileType/Georeference GenericVectorType/Georeference ModelFeatureType/Georeference			

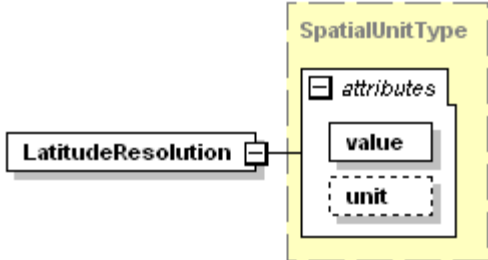
element **GeoreferenceType/SpatialReference**

diagram					
annotation	documentation The reference frame or system from which linear or angular quantities are measured and assigned to the position that a point occupies.				

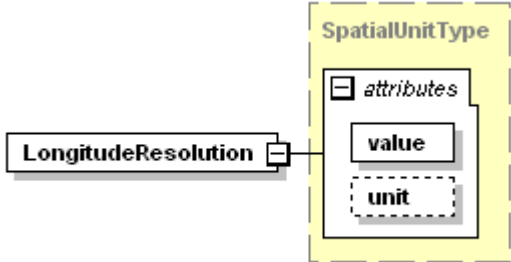
element **GeoreferenceType/SpatialReference/Geographic**

diagram					
annotation	documentation A global or spherical coordinate system.				

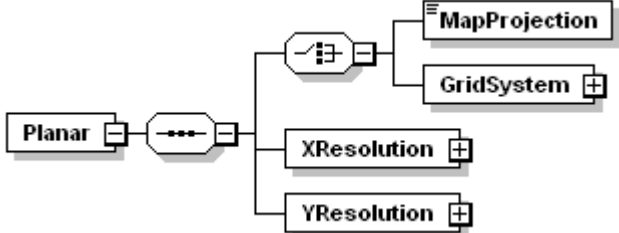
element **GeoreferenceType/SpatialReference/Geographic/LatitudeResolution**

diagram	 <p>The diagram shows a box labeled 'LatitudeResolution' connected to a larger box labeled 'SpatialUnitType'. Inside 'SpatialUnitType', there is a box labeled 'attributes' which contains a box labeled 'value' and a dashed box labeled 'unit'.</p>					
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation
annotation	documentation The minimum difference between two adjacent latitude values expressed in Geographic Coordinate Units of measure.					


element **GeoreferenceType/SpatialReference/Geographic/LongitudeResolution**

diagram	 <p>The diagram shows a box labeled 'LongitudeResolution' connected to a larger box labeled 'SpatialUnitType'. Inside 'SpatialUnitType', there is a box labeled 'attributes' which contains a box labeled 'value' and a dashed box labeled 'unit'.</p>					
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation
annotation	documentation The minimum difference between two adjacent longitude values expressed in Geographic Coordinate Units of measure.					

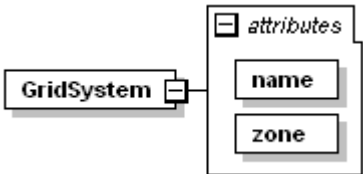
element **GeoreferenceType/SpatialReference/Planar**

diagram	 <p>The diagram shows a box labeled 'Planar' connected to a box with three dots. This box is connected to a box with a grid icon, which is then connected to three boxes: 'MapProjection', 'GridSystem', and 'XResolution'. 'YResolution' is also connected to the 'XResolution' box.</p>					
annotation	documentation Projected coordinate system.					

element **GeoreferenceType/SpatialReference/Planar/MapProjection**

diagram	 A diagram showing a box labeled 'MapProjection' with a small icon of a document with lines to its left.
type	xsd:string
annotation	documentation The name of a map projection system such as transverse Mercator, Albers equal area, or Robinson, all of which (along with numerous other map projection models) provide various mechanisms to project maps of the earth's spherical surface onto a two-dimensional Cartesian coordinate plane.

element **GeoreferenceType/SpatialReference/Planar/GridSystem**

diagram	 A diagram showing a box labeled 'GridSystem' connected to a larger box labeled 'attributes'. The 'attributes' box contains two sub-boxes labeled 'name' and 'zone'.					
attributes	Name name zone	Type derived by: xsd:string xsd:string	Use required required	Default	Fixed	annotation
annotation	documentation A plane-rectangular coordinate system usually based on, and mathematically adjusted to, a map projection so that geographic positions can be readily transformed to and from plane coordinates.					

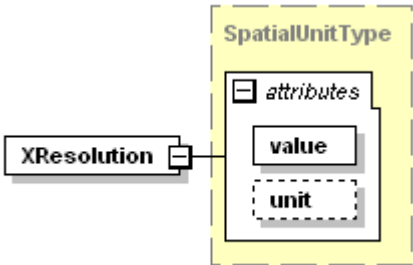
attribute **GeoreferenceType/SpatialReference/Planar/GridSystem/@name**

type	restriction of xsd:string		
facets	Kind enumeration	Value UTM	annotation
	enumeration	UPS	
	enumeration	SPCS	
	enumeration	ARC	

attribute **GeoreferenceType/SpatialReference/Planar/GridSystem/@zone**

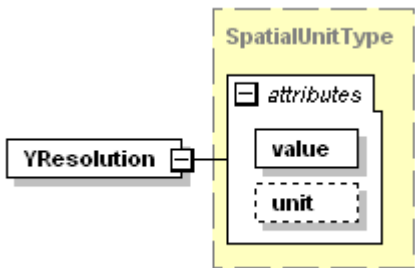
type	xsd:string
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element **GeoreferenceType/SpatialReference/Planar/XResolution**

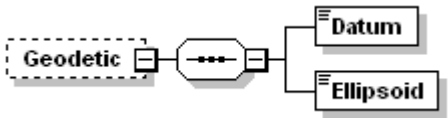
diagram	 A diagram showing a box labeled 'XResolution' connected to a larger box labeled 'SpatialUnitType'. The 'SpatialUnitType' box contains an 'attributes' box with 'value' and 'unit' sub-boxes. The 'unit' sub-box is dashed.
---------	--

type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation
annotation	documentation The (nominal) minimum distance between the "X" or column values of two adjacent points, expressed in a planar spatial distance unit of measure.					


element **GeoreferenceType/SpatialReference/Planar/YResolution**

diagram						
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation
annotation	documentation The (nominal) minimum distance between the "Y" or row values of two adjacent points, expressed in a planar spatial distance unit of measure.					


element **GeoreferenceType/SpatialReference/Geodetic**

diagram						
annotation	documentation Parameters for the shape of the earth.					

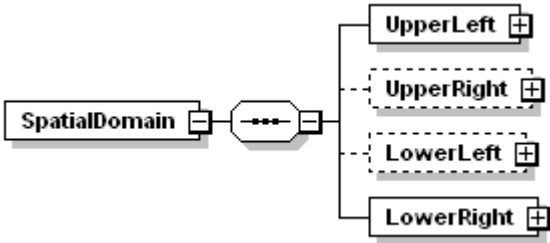
element **GeoreferenceType/SpatialReference/Geodetic/Datum**

diagram			
type	restriction of xsd:string		
facets	Kind enumeration	Value NAD27	annotation
	enumeration	NAD83	
	enumeration	WGS84	
annotation	<div>documentation</div> <p>Datum defines the position of the spheroid relative to the center of the earth. A datum provides a frame of reference for measuring locations on the surface of the earth. It defines the origin and orientation of latitude and longitude lines. The most recently developed and widely used datum is WGS84.</p>		

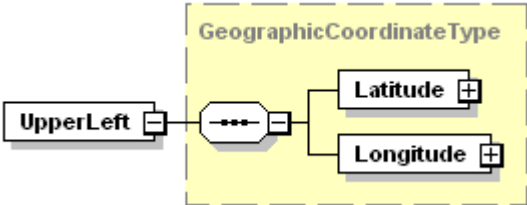
element **GeoreferenceType/SpatialReference/Geodetic/Ellipsoid**

diagram	 A rectangular box labeled "Ellipsoid" with a small icon of three horizontal lines to its left.
type	xsd:string
annotation	documentation Identification given to established representations of the Earth's shape.

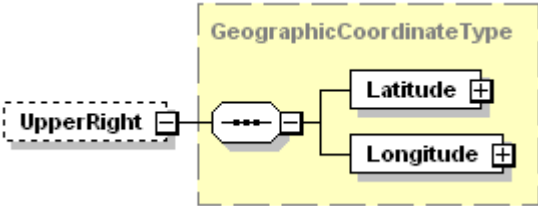
element **GeoreferenceType/SpatialDomain**

diagram	 A diagram showing a box labeled "SpatialDomain" connected to a dashed-line box containing four sub-elements: "UpperLeft", "UpperRight", "LowerLeft", and "LowerRight". Each sub-element has a small icon of a plus sign inside a square to its right.
annotation	documentation The limits of coverage of a dataset expressed by latitude and longitude values in decimal degrees. For datasets that include a complete band of latitude around the earth, the UpperLeft Longitude Coordinate shall be assigned the value -180.0, and the LowerRight Longitude Coordinate shall be assigned the value 180.0.

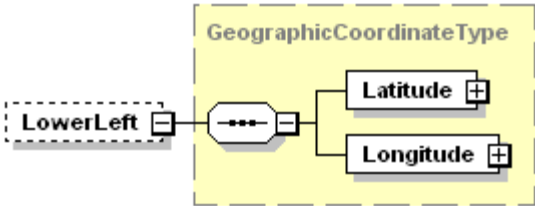
element **GeoreferenceType/SpatialDomain/UpperLeft**

diagram	 A diagram showing a box labeled "UpperLeft" connected to a dashed-line box labeled "GeographicCoordinateType". Inside this box are two sub-elements: "Latitude" and "Longitude", each with a small icon of a plus sign inside a square to its right.
type	GeographicCoordinateType

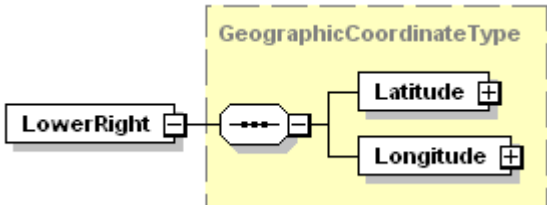
element **GeoreferenceType/SpatialDomain/UpperRight**

diagram	 A diagram showing a dashed-line box labeled "UpperRight" connected to a dashed-line box labeled "GeographicCoordinateType". Inside this box are two sub-elements: "Latitude" and "Longitude", each with a small icon of a plus sign inside a square to its right.
type	GeographicCoordinateType

element **GeoreferenceType/SpatialDomain/LowerLeft**

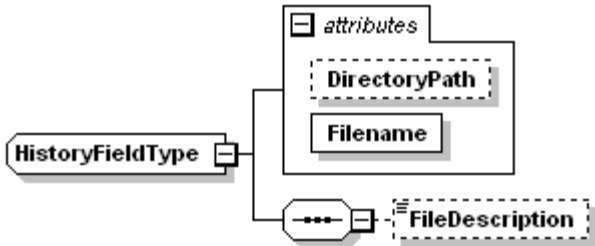
diagram	
type	GeographicCoordinateType

element **GeoreferenceType/SpatialDomain/LowerRight**

diagram	
type	GeographicCoordinateType

A.5.17 HistoryFieldType

complexType **HistoryFieldType**

diagram						
used by	elements GenericRasterFileType/HistoryField GenericVectorType/HistoryField ModelFeatureType/HistoryField TextureFeatureType/HistoryField					
attributes	Name	Type	Use	Default	Fixed	annotation
	DirectoryPath	xsd:string	optional			documentation Path to the file location. This could be URL, relative, or absolute path.
	Filename	xsd:string	required			documentation Filename with extension.
annotation	documentation Complex-type: fields show the previous filenames and file paths. This field allows for multiple iterations that can trace back to the RAW image.					

attribute **HistoryFieldType/@DirectoryPath**

type	xsd:string
annotation	documentation Path to the file location. This could be URL, relative, or absolute path.

attribute **HistoryFieldType/@Filename**

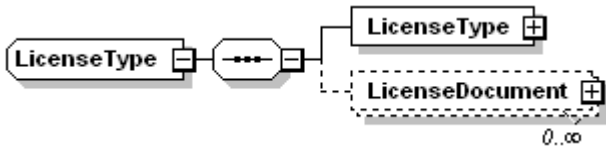
type	xsd:string
annotation	documentation Filename with extension.

element **HistoryFieldType/FileDescription**

diagram	
annotation	documentation What changed in the file from the previous..

A.5.18 LicenseType

complexType **LicenseType**

diagram	
used by	elements NPSIBase/NPSIdentification/DatasetLicenseSummary FileRefType/License
annotation	documentation Complex-type: restrictions and legal prerequisites for accessing and using the overall dataset or each data file.

element **LicenseType/LicenseType**

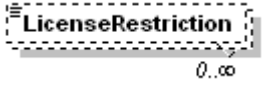
diagram						
attributes	Name type	Type derived by: xsd:string	Use required	Default	Fixed	annotation documentation Name of the license owner: USARMY, USNAVY, USAIRFORCE, USMARINES, DOD, TITLE50, DOD_TITLE50, USGPR, RESTRICTED_USGPR, PUBLIC_DOMAIN, and

	UNKNOWN.
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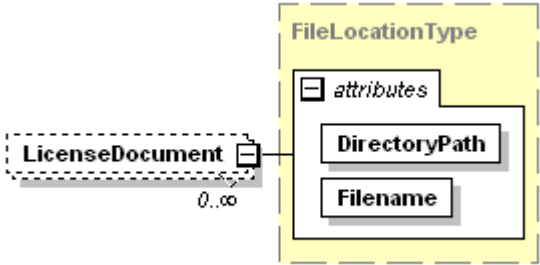
attribute **LicenseType/LicenseType/@type**

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	USARMY	
	enumeration	USNAVY	
	enumeration	USAIRFORCE	
	enumeration	USMARINES	
	enumeration	DOD	
	enumeration	TITLE50	
	enumeration	DOD_TITLE50	
	enumeration	USGPR	
	enumeration	RESTRICTED_USGPR	
	enumeration	PUBLIC_DOMAIN	
	enumeration	UNKNOWN	
annotation	documentation Name of the license owner: USARMY, USNAVY, USAIRFORCE, USMARINES, DOD, TITLE50, DOD_TITLE50, USGPR, RESTRICTED_USGPR, PUBLIC_DOMAIN, and UNKNOWN.		

element **LicenseType/LicenseType/LicenseRestriction**

diagram	 A dashed box labeled 'LicenseRestriction' with a cardinality of '0..∞' below it.
type	xsd:string
annotation	documentation Additional information on license restrictions (free text).

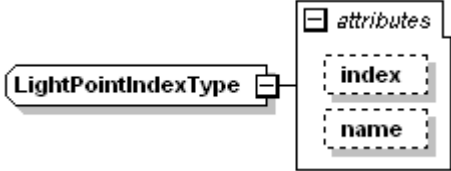
element **LicenseType/LicenseDocument**

diagram	 A dashed box labeled 'LicenseDocument' with a cardinality of '0..∞' below it. It is connected to a yellow box labeled 'FileLocationType' which contains an 'attributes' box with 'DirectoryPath' and 'Filename' elements.					
type	FileLocationType					
attributes	Name	Type	Use	Default	Fixed	annotation
	DirectoryPath	xsd:string	required			documentation Path to the file location. This path is relative to the location of this XML file.
	Filename	xsd:string	required			documentation

	Filename with extension.
annotation	documentation License document(s) describing the license restrictions.

A.5.19 LightPointIndexType

complexType **LightPointIndexType**

diagram						
used by	elements	DictionaryType/LightPointPalette/LightPointIndex LightPointPaletteType/LightPointIndex				
attributes	Name	Type	Use	Default	Fixed	annotation
	index	xsd:string				documentation Integer palette index of light point type.
	name	xsd:string				documentation Use standard light naming convention based on the light name domain.

attribute **LightPointIndexType/@index**

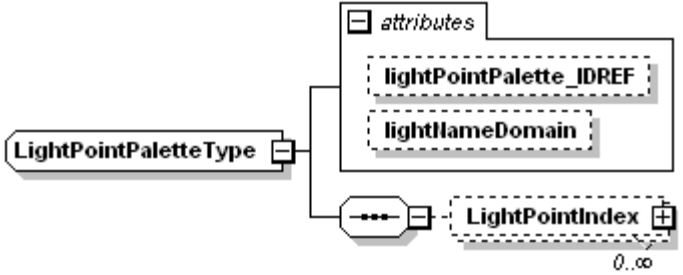
type	xsd:string
annotation	documentation Integer palette index of light point type.

attribute **LightPointIndexType/@name**

type	xsd:string
annotation	documentation Use standard light naming convention based on the light name domain.

A.5.20 LightPointPaletteType

complexType **LightPointPaletteType**

diagram						
used by	element ModelFeatureType/LightPointPalette					
attributes	Name	Type	Use	Default	Fixed	annotation
	lightPointPalette_IDREF	xsd:string				documentation If defined, references a light point palette defined in the dictionary section. Otherwise, light point palette is listed here.
	lightNameDomain					documentation If standard light name or ID is used, indicate the name domain here. For example: CDB, LPRD, etc.

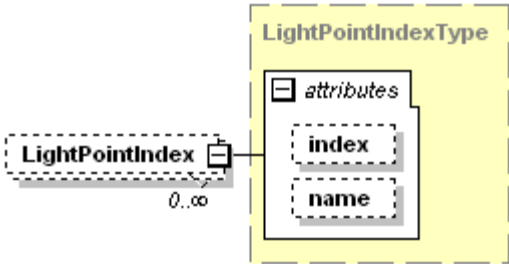
attribute **LightPointPaletteType/@lightPointPalette_IDREF**

type	xsd:string
annotation	documentation If defined, references a light point palette defined in the dictionary section. Otherwise, light point palette is listed here.

attribute **LightPointPaletteType/@lightNameDomain**

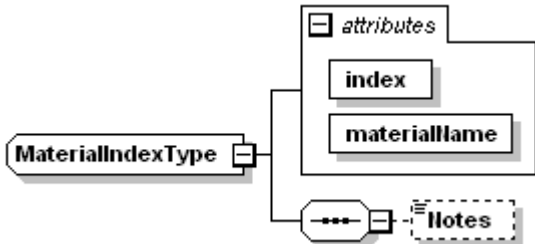
annotation	documentation If standard light name or ID is used, indicate the name domain here. For example: CDB, LPRD, etc.
------------	--

element **LightPointPaletteType/LightPointIndex**

diagram	 <p>The diagram shows a dashed box labeled 'LightPointIndex' with a multiplicity of '0..∞'. This box is connected to a larger box labeled 'LightPointIndexType'. Inside 'LightPointIndexType' is a section labeled 'attributes' which contains two sub-elements: 'index' and 'name'.</p>					
type	LightPointIndexType					
attributes	Name index	Type xsd:string	Use	Default	Fixed	annotation documentation Integer palette index of light point type.
	name	xsd:string				documentation Use standard light naming convention based on the light name domain.

A.5.21 MaterialIndexType

complexType **MaterialIndexType**

diagram	 <p>The diagram shows a box labeled 'MaterialIndexType' connected to a larger box. Inside this box is a section labeled 'attributes' containing 'index' and 'materialName'. Below 'attributes' is a section labeled 'notes' with a dashed border.</p>					
used by	elements	DictionaryType/MaterialPalette/LocalMaterialIndex MaterialPaletteType/LocalMaterialIndex				
attributes	Name index	Type xsd:integer	Use required	Default	Fixed	annotation documentation Integer number that is encoded in the data. For example, is using raster pixel, this could be a value between 0 to 255.
	materialName		required			documentation Spell the material name or ID exactly as defined under the

	material library or domain.
annotation	documentation Complex-type: maps an integer index to a material name defined by the material library or domain.

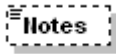
attribute **MaterialIndexType/@index**

type	xsd:integer
annotation	documentation Integer number that is encoded in the data. For example, is using raster pixel, this could be a value between 0 to 255.

attribute **MaterialIndexType/@materialName**

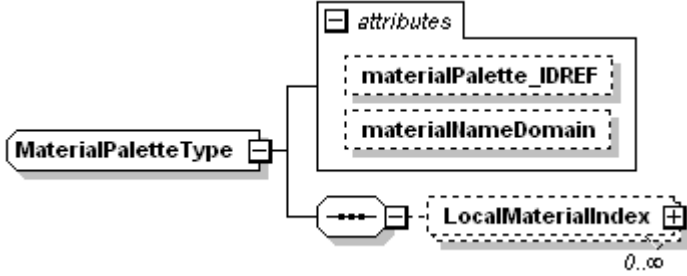
annotation	documentation Spell the material name or ID exactly as defined under the material library or domain.
------------	---

element **MaterialIndexType/Notes**

diagram	
type	xsd:string
annotation	documentation Describe more detailed information regarding the material here.

A.5.22 MaterialPaletteType

complexType **MaterialPaletteType**

diagram						
used by	elements	RasterChannelType/MaterialIndex ModelFeatureType/PolygonMaterialPalette				
attributes	Name	Type	Use	Default	Fixed	annotation
	materialPalette_IDREF	xsd:string				documentation If defined, references a material palette defined in the dictionary. Otherwise, material palette is defined locally. -- Changed to string type--

	materialNameDomain	documentation If standardized material name or ID is used, indicate the name domain or material library here. For example: MPRD, USGS, ASTER, etc.
annotation	documentation Complex-type: provides a mapping of local material ID's to MPRD material IDs in the MPRD archive.	

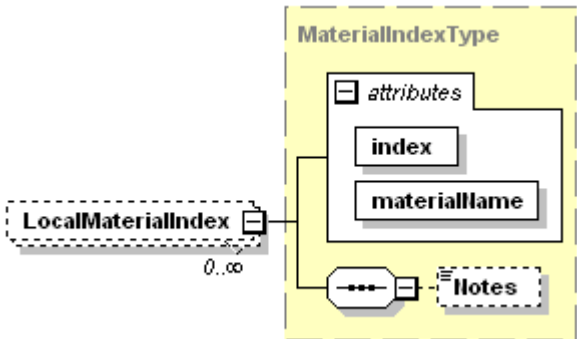
attribute **MaterialPaletteType/@materialPalette_IDREF**

type	xsd:string
annotation	documentation If defined, references a material palette defined in the dictionary. Otherwise, material palette is defined locally. -- Changed to string type--

attribute **MaterialPaletteType/@materialNameDomain**

annotation	documentation If standardized material name or ID is used, indicate the name domain or material library here. For example: MPRD, USGS, ASTER, etc.
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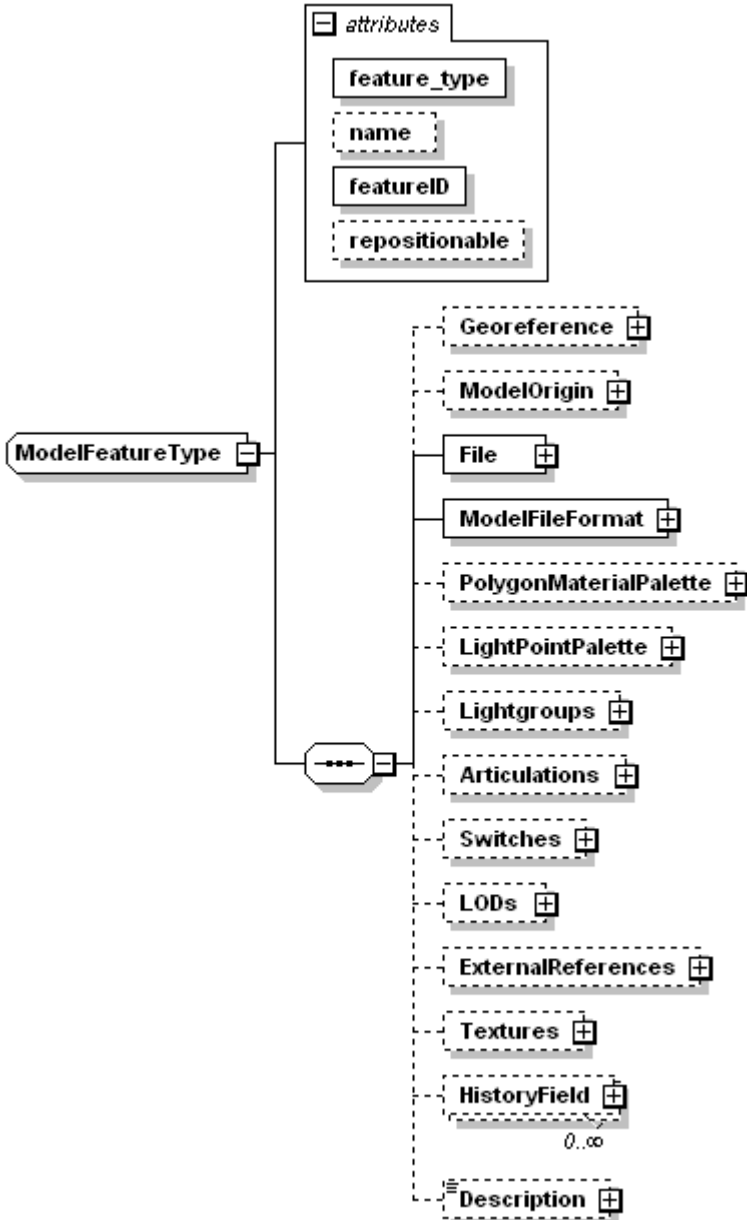
element **MaterialPaletteType/LocalMaterialIndex**

diagram	 <p>The diagram illustrates the structure of the LocalMaterialIndex element. It is shown as a complex type with a dashed border. Inside, there is a box labeled MaterialIndexType which contains two attributes: index and materialName. Below these attributes is a section labeled Notes with a dashed border. A line connects the LocalMaterialIndex box to the MaterialIndexType box, with a multiplicity of 0..∞ indicated near the LocalMaterialIndex box.</p>					
type	MaterialIndexType					
attributes	Name index	Type xsd:integer	Use required	Default	Fixed	annotation documentation Integer number that is encoded in the data. For example, is using raster pixel, this could be a value between 0 to 255.
	materialName		required			documentation Spell the material name or ID exactly as defined under the

		material library or domain.
annotation	documentation Provides a mapping of local material ID's to MPRD IDs in the MPRD archive.	

A.5.23 ModelFeatureType

complexType **ModelFeatureType**

diagram						
used by	element	NPSIBase/NPSIDataset/CulturalFeatureData/ModelFeature				
attributes	Name	Type	Use	Default	Fixed	annotation
	feature_type	derived by: xsd:string	required			documentation Type of model feature air,

	<p>name xsd:string</p> <p>featureID xsd:ID required</p> <p>repositionable derived by: xsd:boolean</p>	<p>ground, sea, etc. documentation Short name of model. documentation Unique ID that identifies the cultural feature. documentation If the model is repositionable, then this element is TRUE, otherwise if static the element is FALSE. If the model is static, then Georeference element is mandatory.</p>
annotation	<p>documentation Complex-type: static or moving/repositionable 3D model data.</p>	

attribute ModelFeatureType/@feature_type

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	AIR	
	enumeration	GROUND	
	enumeration	MUNITION	
	enumeration	OWNSHIP	
	enumeration	SEA	
	enumeration	SLING_LOAD	
	enumeration	MODEL	
	enumeration	LIGHT	
annotation	<p>documentation Type of model feature air, ground, sea, etc.</p>		

attribute ModelFeatureType/@name

type	xsd:string
annotation	<p>documentation Short name of model.</p>

attribute ModelFeatureType/@featureID

type	xsd:ID
annotation	<p>documentation Unique ID that identifies the cultural feature.</p>

attribute **ModelFeatureType/@repositionable**

type	restriction of <code>xsd:boolean</code>
annotation	documentation If the model is repositionable, then this element is TRUE, otherwise if static the element is FALSE. If the model is static, then Georeference element is mandatory.

element **ModelFeatureType/Georeference**

diagram	
type	GeoreferenceType

element **ModelFeatureType/ModelOrigin**

diagram	
type	GeographicCoordinateType
annotation	documentation If the model is static, then define the model origin location here. Geographic coordinate of the origin of the model file.

element **ModelFeatureType/File**

diagram	
---------	--

type	FileRefType					
attributes	Name file_ID	Type xsd:ID	Use	Default	Fixed	annotation documentation File ID is required only if this file is being referenced within this document.
annotation	documentation Physical location of model feature file.					

element **ModelFeatureType/ModelFileFormat**

diagram						
attributes	Name format	Type derived by: xsd:string	Use required	Default	Fixed	annotation documentation Model file format (currently restricted to OpenFlight). documentation File format version, i.e. 15.7, 15.8, etc. documentation The unit type of the models dimensions, i.e. meters, feet.
	format_version	xsd:string	required			
	units	derived by: xsd:string	required			
annotation	documentation Definition of model format.					

attribute **ModelFeatureType/ModelFileFormat/@format**

type	restriction of xsd:string		
facets	Kind enumeration	Value OPENFLIGHT	annotation
annotation	documentation Model file format (currently restricted to OpenFlight).		

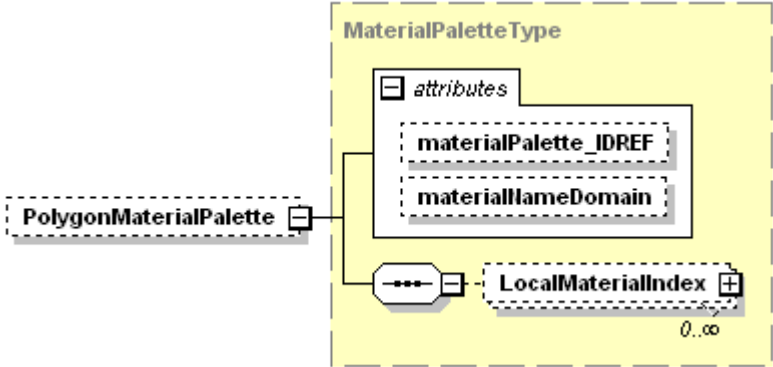
attribute **ModelFeatureType/ModelFileFormat/@format_version**

type	xsd:string					
annotation	documentation File format version, i.e. 15.7, 15.8, etc.					

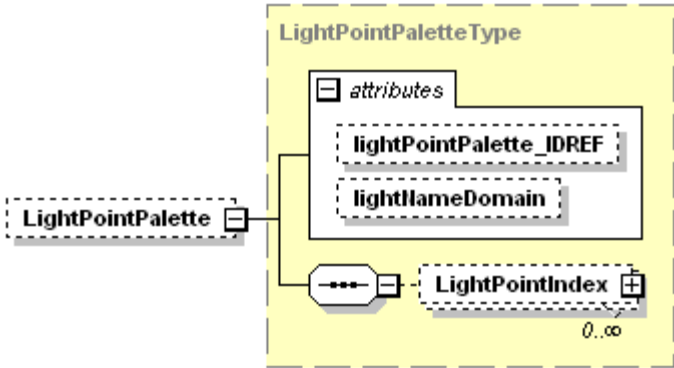
attribute **ModelFeatureType/ModelFileFormat/@units**

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	METERS	
	enumeration	FEET	
annotation	documentation The unit type of the models dimensions, i.e. meters, feet.		

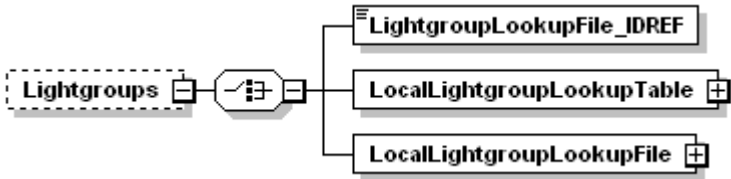
element **ModelFeatureType/PolygonMaterialPalette**

diagram						
type	MaterialPaletteType					
attributes	Name	Type	Use	Default	Fixed	annotation
	materialPalette_IDREF	xsd:string				documentation If defined, references a material palette defined in the dictionary. Otherwise, material palette is defined locally. -- Changed to string type--
	materialNameDomain					documentation If standardized material name or ID is used, indicate the name domain or material library here. For example: MPRD, USGS, ASTER, etc.
annotation	documentation Polygonal material index palette.					

element **ModelFeatureType/LightPointPalette**

diagram	 <p>The diagram shows a dashed box labeled 'LightPointPalette' connected to a larger dashed box labeled 'LightPointPaletteType'. Inside 'LightPointPaletteType', there is an 'attributes' section containing 'lightPointPalette_IDREF' and 'lightNameDomain'. Below this is a 'LightPointIndex' element with a multiplicity of '0..∞'.</p>					
type	LightPointPaletteType					
attributes	Name lightPointPalette_IDREF	Type xsd:string	Use	Default	Fixed	documentation If defined, references a light point palette defined in the dictionary section. Otherwise, light point palette is listed here.
	lightNameDomain					documentation If standard light name or ID is used, indicate the name domain here. For example: CDB, LPRD, etc.
annotation	documentation Contains a list of Light Point Palette Appearance index from the OpenFlight file.					

element **ModelFeatureType/Lightgroups**

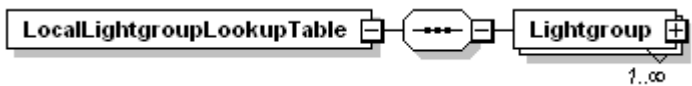
diagram	 <p>The diagram shows a dashed box labeled 'Lightgroups' connected to a container box. Inside the container box are three elements: 'LightgroupLookupFile_IDREF', 'LocalLightgroupLookupTable', and 'LocalLightgroupLookupFile'.</p>					
annotation	documentation Contains a list of light feature groups and assigned numerical IDs that can be controlled externally.					

element **ModelFeatureType/Lightgroups/LightgroupLookupFile_IDREF**

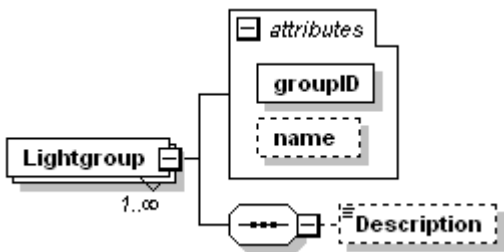
diagram	 <p>The diagram shows a single element box labeled 'LightgroupLookupFile_IDREF'.</p>					
type	xsd:string					

annotation	documentation If defined, references a file in the dictionary, otherwise use local lookup definition.
------------	--

element **ModelFeatureType/Lightgroups/LocalLightgroupLookupTable**

diagram	 <p>The diagram shows a box labeled 'LocalLightgroupLookupTable' connected to a sequence container (a rectangle with three dots) which is then connected to a box labeled 'Lightgroup'. A '1..∞' cardinality constraint is shown below the 'Lightgroup' box.</p>
annotation	documentation Locally defined table of lightgroups and descriptions within XML document.

element **ModelFeatureType/Lightgroups/LocalLightgroupLookupTable/Lightgroup**

diagram	 <p>The diagram shows a box labeled 'Lightgroup' with a '1..∞' cardinality constraint. It has two attributes: 'groupID' (solid box) and 'name' (dashed box). It also has a child element 'Description' (dashed box) connected via a sequence container.</p>					
attributes	Name groupID	Type xsd:integer	Use required	Default	Fixed	annotation documentation Numerical ID used to control light group.
	name	xsd:string				documentation Name of light group, i.e. Landing Lights.
annotation	documentation Light control group.					

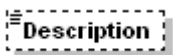
attribute **ModelFeatureType/Lightgroups/LocalLightgroupLookupTable/Lightgroup/@groupID**

type	xsd:integer
annotation	documentation Numerical ID used to control light group.

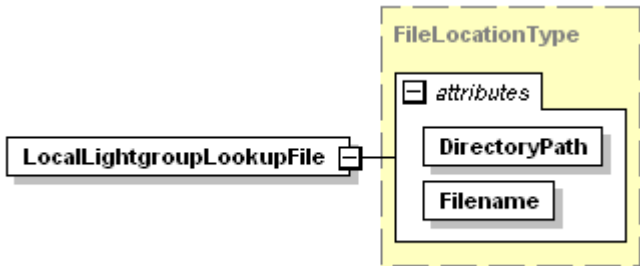
attribute **ModelFeatureType/Lightgroups/LocalLightgroupLookupTable/Lightgroup/@name**

type	xsd:string
annotation	documentation Name of light group, i.e. Landing Lights.

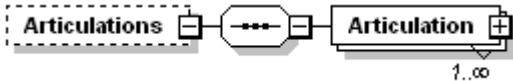
element **ModelFeatureType/Lightgroups/LocalLightgroupLookupTable/Lightgroup/Description**

diagram	 <p>The diagram shows a dashed box labeled 'Description'.</p>
type	xsd:string
annotation	documentation Description of the light group.

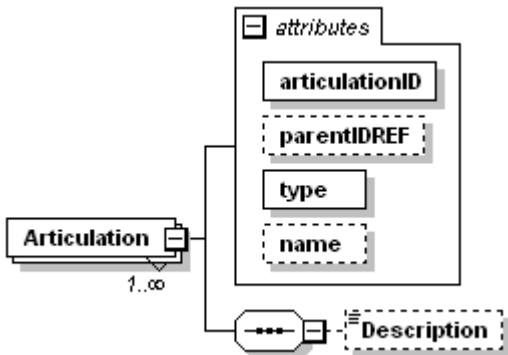
element **ModelFeatureType/Lightgroups/LocalLightgroupLookupFile**

diagram	 <p>The diagram shows a box labeled 'LocalLightgroupLookupFile' connected to a larger box labeled 'FileLocationType'. Inside 'FileLocationType', there is an 'attributes' box containing 'DirectoryPath' and 'Filename'.</p>					
type	FileLocationType					
attributes	Name	Type	Use	Default	Fixed	annotation
	DirectoryPath	xsd:string	required			documentation Path to the file location. This path is relative to the location of this XML file.
	Filename	xsd:string	required			documentation Filename with extension.
annotation	documentation Locally referenced lookup file external to the XML document.					

element **ModelFeatureType/Articulations**

diagram	 <p>The diagram shows a box labeled 'Articulations' connected to a box labeled 'Articulation'. The 'Articulation' box has a multiplicity of '1..∞'.</p>					
annotation	documentation Contains a list of articulations within the model.					

element **ModelFeatureType/Articulations/Articulation**

diagram	 <p>The diagram shows a box labeled 'Articulation' connected to a larger box containing attributes: 'articulationID', 'parentIDREF', 'type', and 'name'. The 'Articulation' box has a multiplicity of '1..∞'. Below the main box is a box labeled 'Description'.</p>					
attributes	Name	Type	Use	Default	Fixed	annotation
	articulationID	xsd:string	required			documentation Numerical ID used to control the articulation.

	<p>parentIDREF xsd:string</p> <p>type derived by: required xsd:string</p> <p>name xsd:string</p>	<p>documentation ID of parent control, switch, LOD, etc.</p> <p>documentation The type of articulation, i.e. rotate, scale, translate, etc.</p> <p>documentation Short name of articulation.</p>
annotation	documentation Model articulation definition.	

attribute ModelFeatureType/Articulations/Articulation/@articulationID

type	xsd:string
annotation	documentation Numerical ID used to control the articulation.

attribute ModelFeatureType/Articulations/Articulation/@parentIDREF

type	xsd:string
annotation	documentation ID of parent control, switch, LOD, etc.

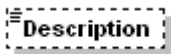
attribute ModelFeatureType/Articulations/Articulation/@type

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	rotate	
	enumeration	translate	
	enumeration	scale	
annotation	documentation The type of articulation, i.e. rotate, scale, translate, etc.		

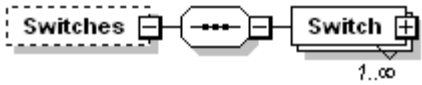
attribute ModelFeatureType/Articulations/Articulation/@name

type	xsd:string
annotation	documentation Short name of articulation.

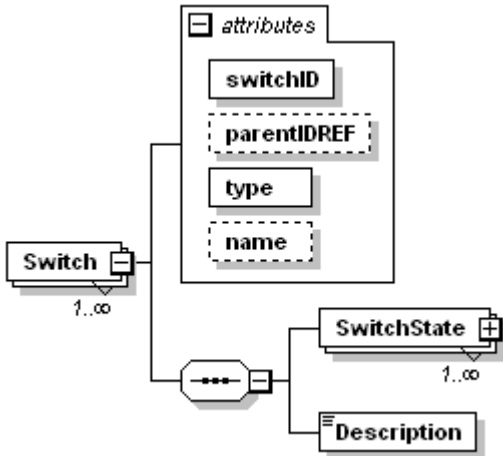
element ModelFeatureType/Articulations/Articulation/Description

diagram	
type	xsd:string
annotation	documentation Description of the articulation.

element **ModelFeatureType/Switches**

diagram	
annotation	documentation Contains a list of switch nodes that can be controlled externally.

element **ModelFeatureType/Switches/Switch**

diagram						
attributes	Name switchID	Type xsd:string	Use required	Default	Fixed	annotation documentation ID of switch control.
	parentIDREF	xsd:string				documentation ID of parent control, switch, LOD, etc.
	type	derived by: xsd:string	required			documentation Type of switch control, i.e. time of day, damage states, etc.
	name	xsd:string				documentation Name of switch node, i.e. tod, damage, paint, etc.
annotation	documentation Switch node definition.					

attribute **ModelFeatureType/Switches/Switch/@switchID**

type	xsd:string
annotation	documentation ID of switch control.

attribute **ModelFeatureType/Switches/Switch/@parentIDREF**

type	xsd:string
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annotation	documentation ID of parent control, switch, LOD, etc.
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attribute ModelFeatureType/Switches/Switch/@type

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	TIME_OF_DAY	
	enumeration	DAMAGE_STATES	
	enumeration	PAINT_SCHEME	
annotation	documentation Type of switch control, i.e. time of day, damage states, etc.		

attribute ModelFeatureType/Switches/Switch/@name

type	xsd:string
annotation	documentation Name of switch node, i.e. tod, damage, paint, etc.

element ModelFeatureType/Switches/Switch/SwitchState

diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	stateID	xsd:string	required			documentation ID of switch state, i.e. 0,1,2, etc.
	name	xsd:string				documentation Name of switch state, i.e. damaged, undamaged, day, night, etc.
annotation	documentation Single state of switch control.					

attribute ModelFeatureType/Switches/Switch/SwitchState/@stateID

type	xsd:string
annotation	documentation ID of switch state, i.e. 0,1,2, etc.

attribute ModelFeatureType/Switches/Switch/SwitchState/@name

type	xsd:string
annotation	documentation Name of switch state, i.e. damaged, undamaged, day, night, etc.

element **ModelFeatureType/Switches/Switch/SwitchState/Description**

diagram	
type	xsd:string
annotation	documentation Description of switch state.

element **ModelFeatureType/Switches/Switch/Description**

diagram	
type	xsd:string
annotation	documentation Description of switch node function.

element **ModelFeatureType/LODs**

diagram	
annotation	documentation List of model Levels of Detail.

element **ModelFeatureType/LODs/LOD**

diagram						
attributes	Name lodID	Type xsd:string	Use required	Default	Fixed	annotation documentation ID of LOD control.
	parentIDREF	xsd:string				documentation ID of parent control, switch, LOD, etc.
	name	xsd:string				documentation Short name of LOD.
	rangeIN	xsd:integer	required			documentation

	<p>rangeOUT xsd:integer required</p> <p>polygons xsd:integer</p>	<p>Distance (in meters) from the model at which the LOD becomes visible. documentation Distance (in meters) from the model at which the LOD becomes invisible. documentation Number of total polygons within this LOD.</p>
annotation	documentation Level of Detail.	

attribute ModelFeatureType/LODs/LOD/@lodID

type	xsd:string
annotation	documentation ID of LOD control.

attribute ModelFeatureType/LODs/LOD/@parentIDREF

type	xsd:string
annotation	documentation ID of parent control, switch, LOD, etc.

attribute ModelFeatureType/LODs/LOD/@name

type	xsd:string
annotation	documentation Short name of LOD.

attribute ModelFeatureType/LODs/LOD/@rangeIN

type	xsd:integer
annotation	documentation Distance (in meters) from the model at which the LOD becomes visible.

attribute ModelFeatureType/LODs/LOD/@rangeOUT

type	xsd:integer
annotation	documentation Distance (in meters) from the model at which the LOD becomes invisible.

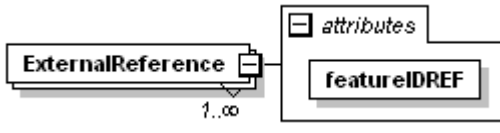
attribute ModelFeatureType/LODs/LOD/@polygons

type	xsd:integer
annotation	documentation Number of total polygons within this LOD.

element **ModelFeatureType/ExternalReferences**

diagram	
annotation	documentation List of externally referenced models.

element **ModelFeatureType/ExternalReferences/ExternalReference**

diagram						
attributes	Name featureIDREF	Type xsd:string	Use required	Default	Fixed	annotation documentation ID of externally referenced model file.
annotation	documentation External model definition.					

attribute **ModelFeatureType/ExternalReferences/ExternalReference/@featureIDREF**

type	xsd:string
annotation	documentation ID of externally referenced model file.

element **ModelFeatureType/ExternalReferences/ExternalReferenceFile**

diagram						
type	AggregationFieldType					
attributes	Name DirectoryPath	Type xsd:string	Use required	Default	Fixed	annotation documentation Path to the file location. This path is relative to the location

	Filename	xsd:string	required	of this XML file. documentation Filename with extension.
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element **ModelFeatureType/Textures**

diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	texMemUsage					
annotation	documentation	List of textures referenced by the model.				

attribute **ModelFeatureType/Textures/@texMemUsage**

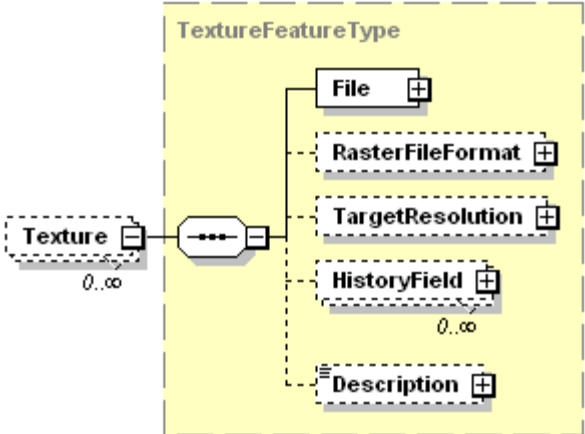
element **ModelFeatureType/Textures/TextureReference**

diagram						
type	extension of xsd:IDREF					
attributes	Name	Type	Use	Default	Fixed	annotation
	file_IDREF	xsd:IDREF				
annotation	documentation	Refer to a texture file defined in this document.				

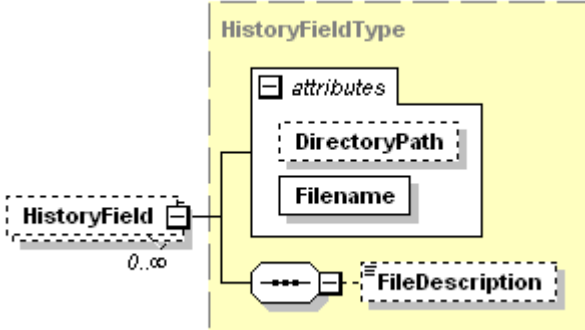
attribute **ModelFeatureType/Textures/TextureReference/@file_IDREF**

type	xsd:IDREF
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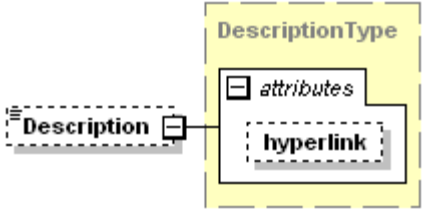
element **ModelFeatureType/Textures/Texture**

diagram	 <p>The diagram shows a Texture element (dashed box) with a cardinality of 0..∞ connected to a TextureFeatureType container (yellow dashed box). Inside the container, there is a File element (solid box) and a group of four optional elements: RasterFileFormat, TargetResolution, HistoryField (with cardinality 0..∞), and Description (all in dashed boxes).</p>
type	TextureFeatureType

element **ModelFeatureType/HistoryField**

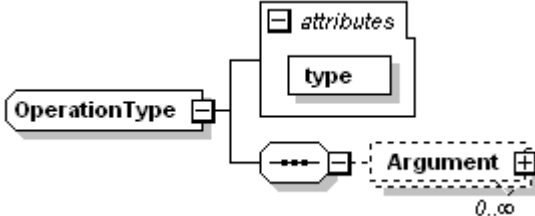
diagram	 <p>The diagram shows a HistoryField element (dashed box) with a cardinality of 0..∞ connected to a HistoryFieldType container (yellow dashed box). Inside the container, there is an attributes group (solid box) containing DirectoryPath and Filename (both in solid boxes), and a FileDescription element (dashed box).</p>					
type	HistoryFieldType					
attributes	Name	Type	Use	Default	Fixed	annotation
	DirectoryPath	xsd:string	optional			documentation Path to the file location. This could be URL, relative, or absolute path.
	Filename	xsd:string	required			documentation Filename with extension.
annotation	documentation List of fields within the vector feature file attribute table.					

element **ModelFeatureType/Description**

diagram						
type	DescriptionType					
attributes	Name hyperlink	Type xsd:string	Use	Default	Fixed	annotation
annotation	documentation Description of model.					

A.5.24 OperationType

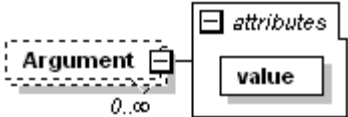
complexType **OperationType**

diagram						
used by	element PixelMappingType/Operation					
attributes	Name type	Type derived by: xsd:string	Use required	Default	Fixed	annotation

attribute **OperationType/@type**

type	restriction of xsd:string				
facets	Kind	Value	annotation		
	enumeration	LINEAR			
	enumeration	SCALE			
	enumeration	OFFSET			
	enumeration	LOG10			
	enumeration	LOGE			
	enumeration	NORMALIZE			
	enumeration	LOG10NORM			
	enumeration	LOGENORM			
	enumeration	POWER			
	enumeration	THRESHOLD			

element **OperationType/Argument**

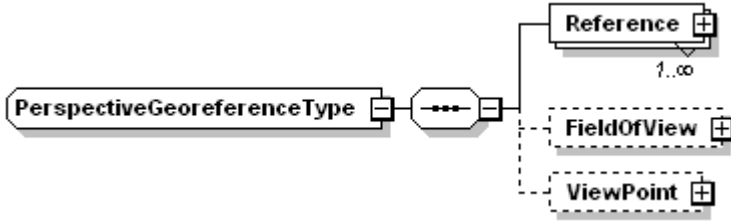
diagram						
attributes	Name value	Type xsd:double	Use required	Default	Fixed	annotation

attribute **OperationType/Argument/@value**

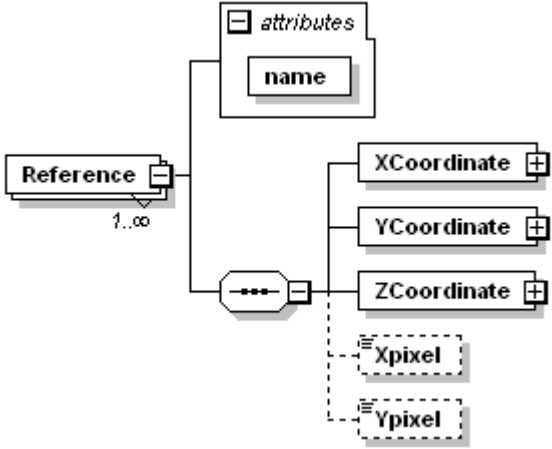
type	xsd:double
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A.5.25 PerspectiveGeoreferenceType

complexType **PerspectiveGeoreferenceType**

diagram						
used by	element	GenericRasterFileType/PerspectiveReference				
annotation	documentation	Complex-type: data structure intended for defining geographic references in a perspective image.				

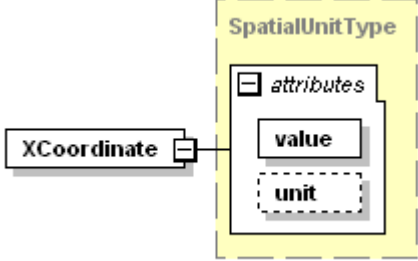
element **PerspectiveGeoreferenceType/Reference**

diagram						
attributes	Name name	Type xsd:string	Use required	Default	Fixed	annotation

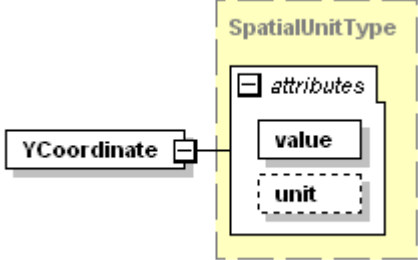
attribute **PerspectiveGeoreferenceType/Reference/@name**

type	xsd:string
------	------------

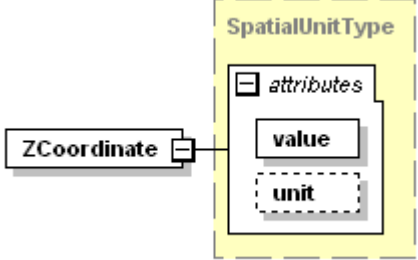
element **PerspectiveGeoreferenceType/Reference/XCoordinate**

diagram						
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

element **PerspectiveGeoreferenceType/Reference/YCoordinate**


diagram						
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

element **PerspectiveGeoreferenceType/Reference/ZCoordinate**

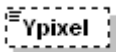
diagram						
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

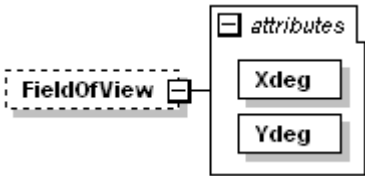
element **PerspectiveGeoreferenceType/Reference/Xpixel**

diagram						
type	xsd:integer					

element **PerspectiveGeoreferenceType/Reference/Ypixel**

diagram						
type	xsd:integer					

element **PerspectiveGeoreferenceType/FieldOfView**

diagram						
attributes	Name Xdeg Ydeg	Type xsd:decimal xsd:decimal	Use required required	Default	Fixed	annotation

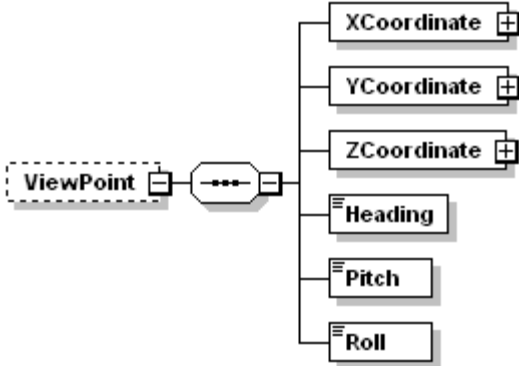
attribute **PerspectiveGeoreferenceType/FieldOfView/@Xdeg**

type	xsd:decimal
------	--------------------

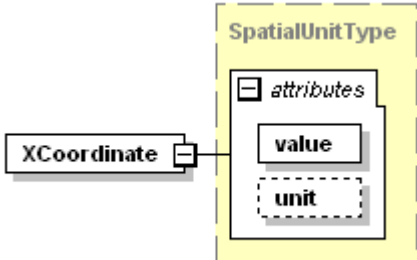
attribute **PerspectiveGeoreferenceType/FieldOfView/@Ydeg**

type	xsd:decimal
------	--------------------

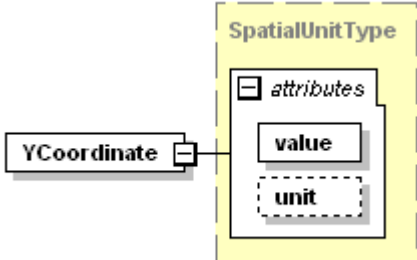
element **PerspectiveGeoreferenceType/ViewPoint**

diagram	 <p>The diagram shows a 'ViewPoint' element (dashed border) connected to a container (octagon with three dots) which then branches into six child elements: 'XCoordinate', 'YCoordinate', 'ZCoordinate', 'Heading', 'Pitch', and 'Roll'. Each child element has a small square icon with a plus sign in the top right corner.</p>
annotation	documentation View or Camera Geo Location and orientation.

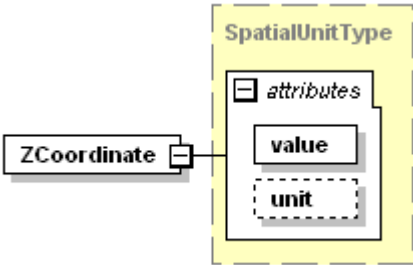
element **PerspectiveGeoreferenceType/ViewPoint/XCoordinate**

diagram	 <p>The diagram shows an 'XCoordinate' element connected to a 'SpatialUnitType' container. The 'SpatialUnitType' container has an 'attributes' section with a 'value' field and a dashed 'unit' field.</p>					
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

element **PerspectiveGeoreferenceType/ViewPoint/YCoordinate**

diagram	 <p>The diagram shows a 'YCoordinate' element connected to a 'SpatialUnitType' container. The 'SpatialUnitType' container has an 'attributes' section with a 'value' field and a dashed 'unit' field.</p>					
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

element **PerspectiveGeoreferenceType/ViewPoint/ZCoordinate**

diagram	 <p>The diagram shows a box labeled 'ZCoordinate' connected to a larger box labeled 'SpatialUnitType'. Inside 'SpatialUnitType', there is a section labeled 'attributes' containing a 'value' box and a dashed 'unit' box.</p>					
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

element **PerspectiveGeoreferenceType/ViewPoint/Heading**

diagram	 <p>The diagram shows a box labeled 'Heading' with a small icon to its left.</p>					
type	xsd:decimal					

element **PerspectiveGeoreferenceType/ViewPoint/Pitch**

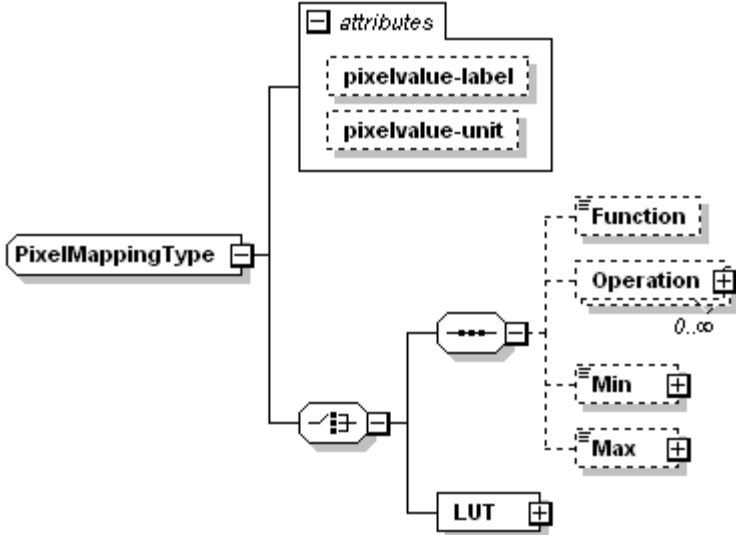
diagram	 <p>The diagram shows a box labeled 'Pitch' with a small icon to its left.</p>					
type	xsd:decimal					

element **PerspectiveGeoreferenceType/ViewPoint/Roll**

diagram	 <p>The diagram shows a box labeled 'Roll' with a small icon to its left.</p>					
type	xsd:decimal					

A.5.26 PixelMappingType

complexType **PixelMappingType**

diagram						
used by	elements	RasterChannelType/Color/PixelMapping RasterChannelType/Alpha/PixelMapping RasterChannelType/Reflectivity/PixelMapping RasterChannelType/Reflection/PixelMapping RasterChannelType/Radiance/PixelMapping RasterChannelType/Irradiance/PixelMapping RasterChannelType/MaterialProperty/PixelMapping RasterChannelType/Elevation/PixelMapping RasterChannelType/HorizonMap/PixelMapping				
attributes	Name	Type	Use	Default	Fixed	annotation
	pixelvalue-label	xsd:string				
	pixelvalue-unit	xsd:string				
annotation	documentation Complex-type: template data structure describing relationship between pixel values found in a channel and physical quantities.					


attribute **PixelMappingType/@pixelvalue-label**

type	xsd:string
------	------------

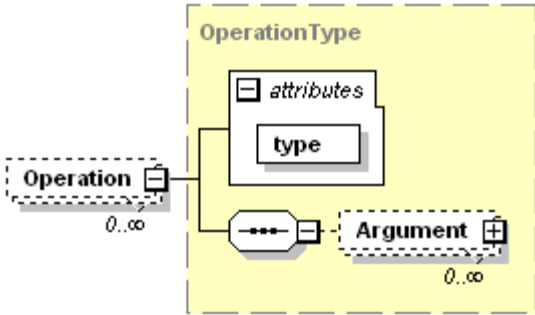
attribute **PixelMappingType/@pixelvalue-unit**

type	xsd:string
------	------------


element **PixelMappingType/Function**

diagram	
type	xsd:string
annotation	documentation Mapping function type: linear ($y=ax+b$) , gamma ($y=x^g$) or logarithmic ($y = \log(x)$).

element **PixelMappingType/Operation**

diagram						
type	OperationType					
attributes	Name type	Type derived by: xsd:string	Use required	Default	Fixed	annotation
annotation	documentation A sequence of ENCODING operations performed to derive the pixel values.					


element **PixelMappingType/Min**

diagram						
type	extension of xsd:double					
attributes	Name unit	Type xsd:string	Use	Default	Fixed	annotation
annotation	documentation Minimum value before encoding in the physical unit.					

attribute **PixelMappingType/Min/@unit**

type	xsd:string
------	-------------------

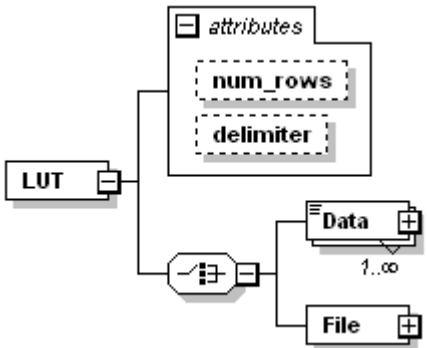
element **PixelMappingType/Max**

diagram						
type	extension of xsd:double					
attributes	Name unit	Type xsd:string	Use	Default	Fixed	annotation
annotation	documentation Maximum value before encoding in the physical unit.					

attribute **PixelMappingType/Max/@unit**

type	xsd:string
------	-------------------

element PixelMappingType/LUT

diagram						
attributes	Name num_rows delimiter	Type xsd:integer derived by: xsd:string	Use	Default	Fixed	annotation


attribute PixelMappingType/LUT/@num_rows

type	xsd:integer
------	--------------------

attribute PixelMappingType/LUT/@delimiter

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	,	
	enumeration	/s	
	enumeration	/t	
	enumeration	;	

element PixelMappingType/LUT/Data

diagram						
type	extension of xsd:string					
attributes	Name row	Type xsd:integer	Use optional	Default	Fixed	annotation

attribute PixelMappingType/LUT/Data/@row

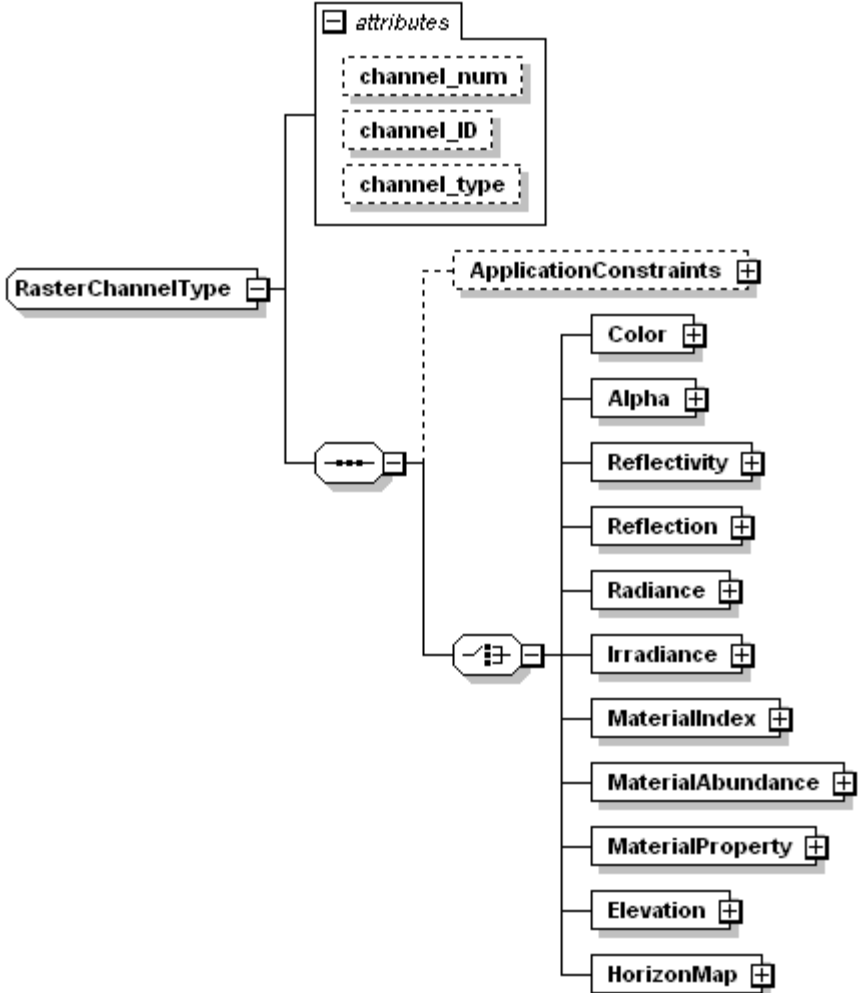
type	xsd:integer
------	--------------------

element **PixelMappingType/LUT/File**

diagram	<pre>classDiagram class FileLocationType { DirectoryPath Filename } class File FileLocationType < -- File</pre>					
type	FileLocationType					
attributes	Name DirectoryPath	Type xsd:string	Use required	Default	Fixed	annotation documentation Path to the file location. This path is relative to the location of this XML file. documentation Filename with extension.
	Filename	xsd:string	required			

A.5.27 RasterChannelType

complexType **RasterChannelType**

diagram						
used by	element RasterFileFormatType/Channel					
attributes	Name channel_num channel_ID channel_type	Type derived by: xsd:string xsd:ID derived by: xsd:string	Use	Default	Fixed	annotation documentation Channel_ID is a unique ID in a XML document. This is an optional attribute; used when it is necessary to reference this channel from another raster file.
annotation	documentation Complex-type: template data structure describing a channel.					

attribute **RasterChannelType/@channel_num**

type	restriction of xsd:string
------	----------------------------------

attribute **RasterChannelType/@channel_ID**

type	xsd:ID
annotation	documentation Channel_ID is a unique ID in a XML document. This is an optional attribute; used when it is necessary to reference this channel from another raster file.

attribute **RasterChannelType/@channel_type**

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	RED	
	enumeration	GREEN	
	enumeration	BLUE	
	enumeration	ELEVATION	
	enumeration	MATERIALINDEX	
	enumeration	MATERIALABUNDANCE	
	enumeration	MATERIALPROPERTY	
	enumeration	RADIANCE	
	enumeration	IRRADIANCE	
	enumeration	REFLECTIVITY	
	enumeration	HORIZONMAP	
	enumeration	REFLECTION	
	enumeration	ALPHA	

element **RasterChannelType/ApplicationConstraints**

diagram	<p>The diagram illustrates the structure of the ApplicationConstraintsType. It is represented as a yellow rectangular container. Inside this container, there are six elements: Illuminator, ContentDate, Ephemeris, Season, TimeOfDay, and Environment. Each of these elements is enclosed in a dashed-line box and has a small square icon with a plus sign in its top right corner. To the left of the container, there is an element named ApplicationConstraints, also in a dashed-line box with a plus sign icon. A solid line connects the ApplicationConstraints element to a small circle containing three dots, which in turn connects to the left side of the ApplicationConstraintsType container.</p>
type	ApplicationConstraintsType
annotation	documentation Describes the simulated conditions under which the imagery channel is most valid.

element **RasterChannelType/Color**

diagram						
attributes	Name ColorSpace Name	Type derived by: xsd:string xsd:string	Use required required	Default	Fixed	annotation documentation Short description of this channel. For example: R, G, or B.
annotation	documentation This channel(s) is a known Tristimulus color model (RGB, XYZ, etc.).					

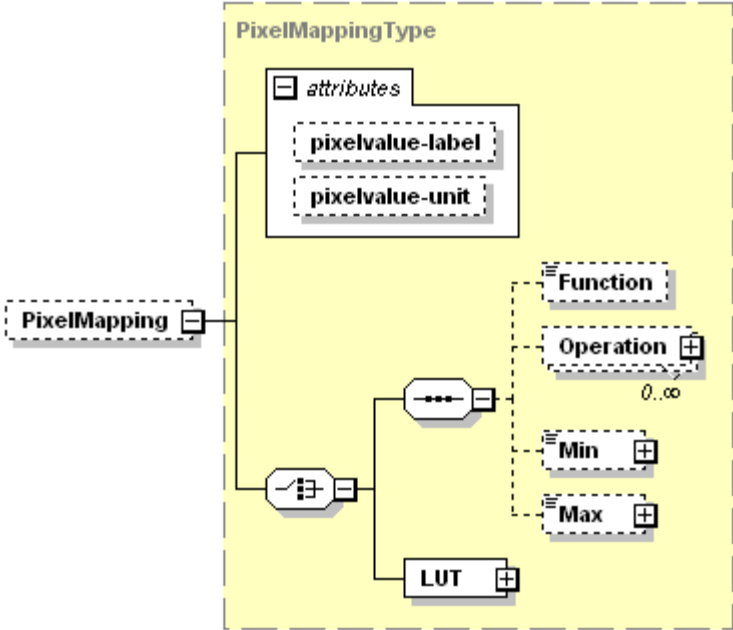
attribute **RasterChannelType/Color/@ColorSpace**

type	restriction of xsd:string		
facets	Kind enumeration	Value RGB	annotation
	enumeration	Adobe RGB	
	enumeration	Apple RGB	
	enumeration	sRGB	
	enumeration	HSV	
	enumeration	HLS	
	enumeration	XYZ	
	enumeration	xyY	
	enumeration	Lab	
	enumeration	Luv	
	enumeration	Luminance	
	enumeration	Multi-spectral	
	enumeration		

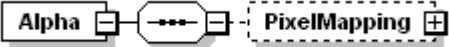
attribute **RasterChannelType/Color/@Name**

type	xsd:string
annotation	documentation Short description of this channel. For example: R, G, or B.

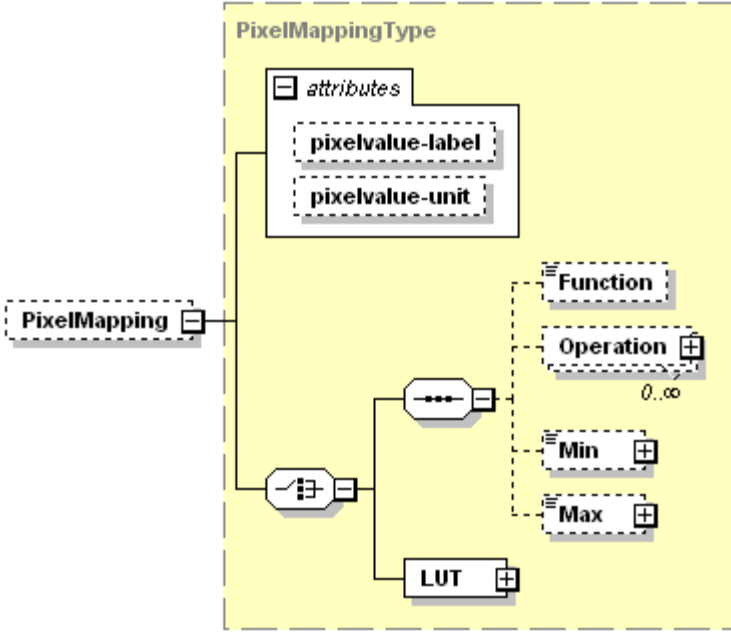
element **RasterChannelType/Color/PixelMapping**

diagram	 <p>The diagram illustrates the structure of the PixelMappingType element. It is represented by a large yellow dashed rectangle. Inside this rectangle, there is a box labeled attributes containing two sub-elements: pixelvalue-label and pixelvalue-unit. To the left of the main structure, outside the yellow rectangle, is a box labeled PixelMapping with a small square icon. A line connects this box to the main structure. Inside the yellow rectangle, there is a complex structure of boxes and lines. A box labeled Function is connected to a box labeled Operation, which is further connected to a box labeled Min and a box labeled Max. The Operation box has a small square icon and a plus sign. The Min and Max boxes also have small square icons and plus signs. The Function box has a small square icon. The Operation box is connected to a box labeled LUT (Look Up Table) which has a small square icon and a plus sign. The Function box is connected to a box labeled Operation which has a small square icon and a plus sign. The Operation box is connected to a box labeled Min and a box labeled Max. The Min and Max boxes also have small square icons and plus signs. The Function box has a small square icon. The Operation box is connected to a box labeled LUT (Look Up Table) which has a small square icon and a plus sign.</p>					
type	PixelMappingType					
attributes	Name	Type	Use	Default	Fixed	annotation
	pixelvalue-label	xsd:string				
	pixelvalue-unit	xsd:string				

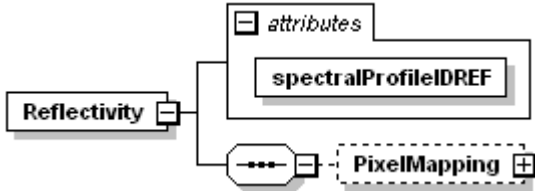
element **RasterChannelType/Alpha**

diagram	 <p>The diagram illustrates the structure of the Alpha element. It is represented by a sequence of boxes: Alpha (with a small square icon), followed by a box with three dots (with a small square icon), and finally a box labeled PixelMapping (with a small square icon and a plus sign).</p>					
annotation	documentation Alpha channel is transparency mask mostly used for blending of overlapping images.					

element **RasterChannelType/Alpha/PixelMapping**

diagram						
type	PixelMappingType					
attributes	Name	Type	Use	Default	Fixed	annotation
	pixelvalue-label	xsd:string				
	pixelvalue-unit	xsd:string				

element **RasterChannelType/Reflectivity**

diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	spectralProfileIDREF	xsd:string	required			documentation spectralProfileIDREF is a reference to an ID defined in this XML document under the Dictionary\spectralProfileID element. It may refer to either illuminating source spectral distribution or sensor spectral response .
annotation	documentation This channel is mapped to represent normalized scene reflectivity for given viewing and illuminating spectral responses. Reflectivity mosaics are processed from remote sensing products so that the digital numbers stored at each pixel location estimate the ground truth reflectivity of the terrain imaged at each pixel. The spectral profile detailing the relative response associated with each layer is contained within the NPSI metadata associated with that layer. Example spectral profiles included in the dataset include: photopic blue response , photopic green response, photopic red response, and NVG (Class B lens filter) response.					

attribute **RasterChannelType/Reflectivity/@spectralProfileIDREF**

type	xsd:string
annotation	documentation spectralProfileIDREF is a reference to an ID defined in this XML document under the Dictionary\spectralProfileID element. It may refer to either illuminating source spectral distribution or sensor spectral response .

element **RasterChannelType/Reflectivity/PixelMapping**

diagram						
type	PixelMappingType					
attributes	Name	Type	Use	Default	Fixed	annotation
	pixelvalue-label	xsd:string				
	pixelvalue-unit	xsd:string				

element **RasterChannelType/Reflection**

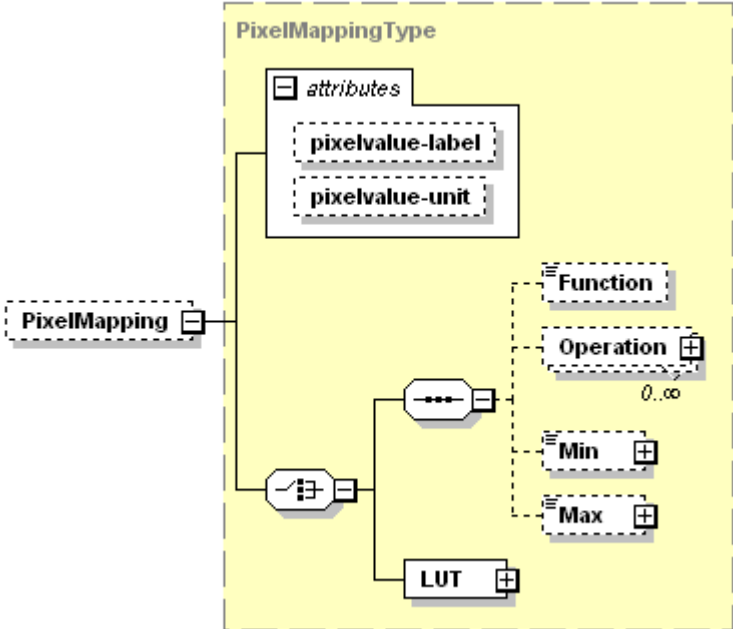
diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	spectralProfileIDREF	xsd:string	required			documentation spectralProfileIDREF is a reference to an ID defined in this XML document under the Dictionary\spectralProfileID element. It may refer to either illuminating source spectral distribution or sensor spectral response .
annotation	documentation					

	This channel is mapped to represent normalized reflected energy for given viewing and illuminating spectral responses.
--	--

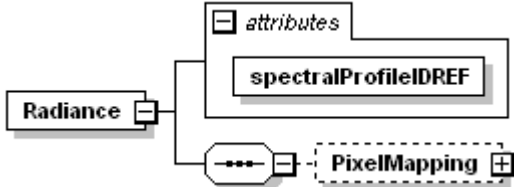
attribute **RasterChannelType/Reflection/@spectralProfileIDREF**

type	xsd:string
annotation	documentation spectralProfileIDREF is a reference to an ID defined in this XML document under the Dictionary\spectralProfileID element. It may refer to either illuminating source spectral distribution or sensor spectral response .

element **RasterChannelType/Reflection/PixelMapping**

diagram						
type	PixelMappingType					
attributes	Name	Type	Use	Default	Fixed	annotation
	pixelvalue-label	xsd:string				
	pixelvalue-unit	xsd:string				

element **RasterChannelType/Radiance**

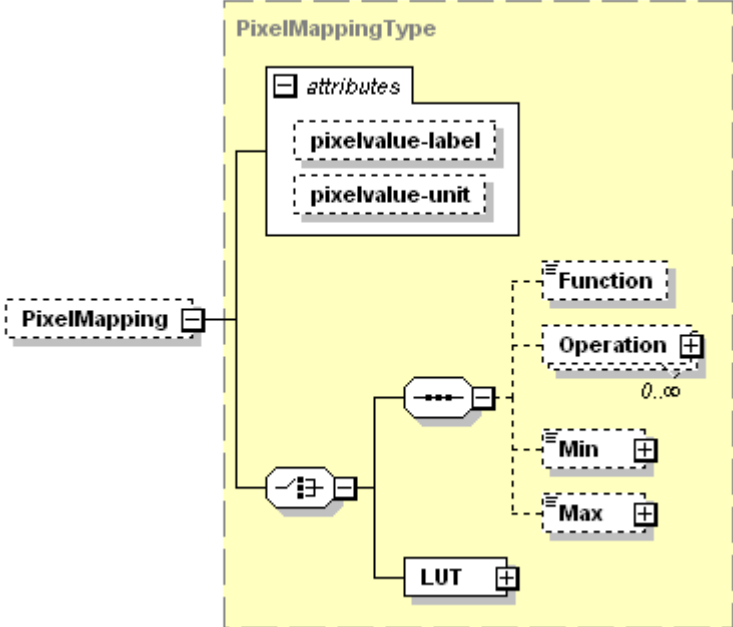
diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	spectralProfileIDREF	xsd:string	required			documentation spectralProfileIDREF is a reference to an ID defined in this XML document under the Dictionary\spectralProfileID

		element. It may refer to either illuminating source spectral distribution or sensor spectral response .
annotation	documentation This channel is mapped to represent actual integrated scene radiance per pixel in a given physical unit (e.g.w/cm2/sr) and a specified spectral response.	

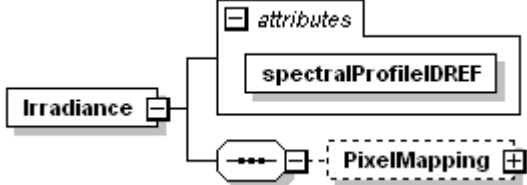
attribute **RasterChannelType/Radiance/@spectralProfileIDREF**

type	xsd:string
annotation	documentation spectralProfileIDREF is a reference to an ID defined in this XML document under the Dictionary\spectralProfileID element. It may refer to either illuminating source spectral distribution or sensor spectral response .

element **RasterChannelType/Radiance/PixelMapping**

diagram						
type	PixelMappingType					
attributes	Name	Type	Use	Default	Fixed	annotation
	pixelvalue-label	xsd:string				
	pixelvalue-unit	xsd:string				

element **RasterChannelType/Irradiance**

diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	spectralProfileIDREF	xsd:string	required			documentation

		spectralProfileIDREF is a reference to an ID defined in this XML document under the Dictionary\spectralProfileID element. It may refer to either illuminating source spectral distribution or sensor spectral response .
annotation	documentation	This channel is mapped to represent actual flux density per pixel in a given physical unit (e.g. w/cm2) for a given sensor spectral response. Irradiance mosaics are processed from remote sensing and GIS products so that the digital numbers stored at each pixel location estimate the radiant flux density (due to specified natural or cultural sources) incident to the terrain imaged at each pixel. The spectral profile detailing the relative response associated with each layer is contained within the NPSI metadata associated with that layer. Example spectral profiles included in the dataset include: photopic blue response , photopic green response, photopic red response, and NVG (Class B lens filter) response.

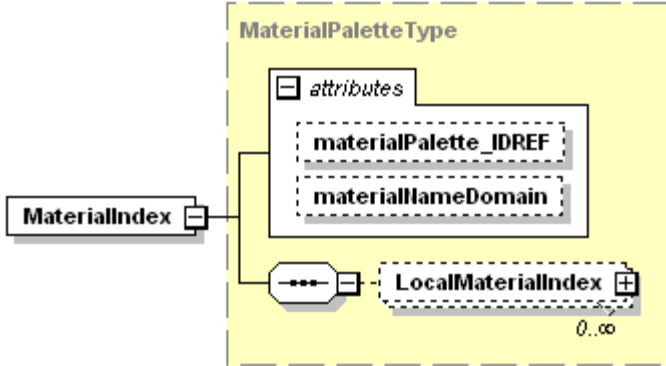
attribute **RasterChannelType/Irradiance/@spectralProfileIDREF**

type	xsd:string
annotation	documentation spectralProfileIDREF is a reference to an ID defined in this XML document under the Dictionary\spectralProfileID element. It may refer to either illuminating source spectral distribution or sensor spectral response .

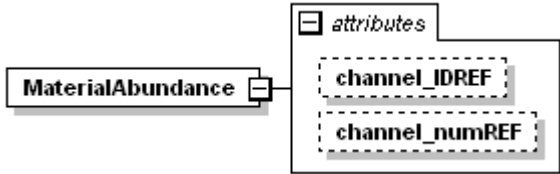
element **RasterChannelType/Irradiance/PixelMapping**

diagram						
type	PixelMappingType					
attributes	Name pixelvalue-label pixelvalue-unit	Type xsd:string xsd:string	Use	Default	Fixed	annotation

element **RasterChannelType/MaterialIndex**

diagram						
type	MaterialPaletteType					
attributes	Name materialPalette_IDREF	Type xsd:string	Use	Default	Fixed	annotation documentation If defined, references a material palette defined in the dictionary. Otherwise, material palette is defined locally. -- Changed to string type-- documentation If standardized material name or ID is used, indicate the name domain or material library here. For example: MPRD, USGS, ASTER, etc.
	materialNameDomain					
annotation	documentation This channel is mapped to MPRD material indexes.					

element **RasterChannelType/MaterialAbundance**

diagram						
attributes	Name channel_IDREF	Type xsd:IDREF	Use	Default	Fixed	annotation documentation References the imagery channel containing the material IDs mixed by this

	channel_numREF	channel. Channel_ID is unique in an XML document. documentation References the imagery channel containing the material IDs mixed by this channel. Channel_num is NOT unique in an XML document.
annotation	documentation This channel is mapped to represent normalized percentages of abundance of materials encoded in a referenced imagery channel.	

attribute **RasterChannelType/MaterialAbundance/@channel_IDREF**

type	xsd:IDREF
annotation	documentation References the imagery channel containing the material IDs mixed by this channel. Channel_ID is unique in an XML document.

attribute **RasterChannelType/MaterialAbundance/@channel_numREF**

annotation	documentation References the imagery channel containing the material IDs mixed by this channel. Channel_num is NOT unique in an XML document.
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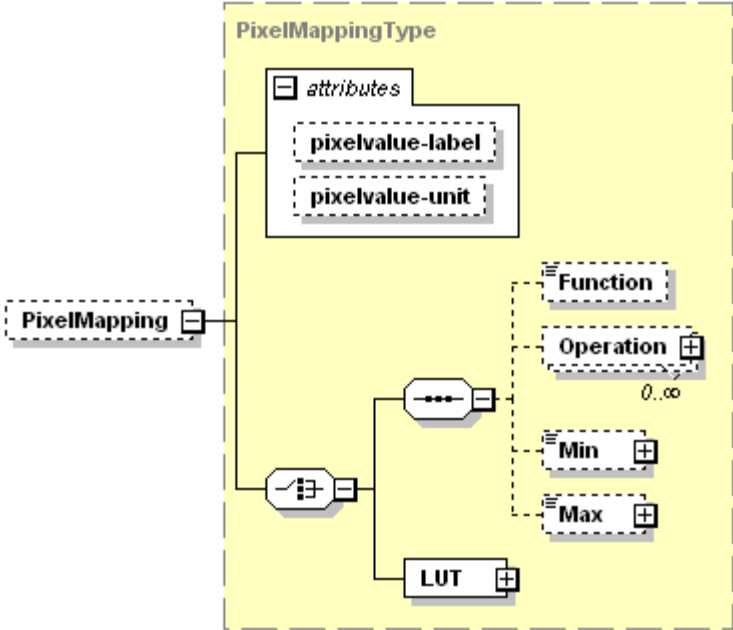
element **RasterChannelType/MaterialProperty**

diagram						
attributes	Name propertyIDREF	Type xsd:string	Use required	Default	Fixed	annotation
annotation	documentation This channel is mapped to represent values of a physical measure for the material depicted at each pixel.					

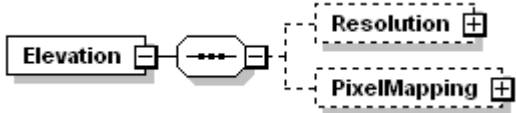
attribute **RasterChannelType/MaterialProperty/@propertyIDREF**

type	xsd:string
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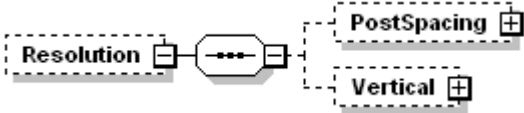
element **RasterChannelType/MaterialProperty/PixelMapping**

diagram						
type	PixelMappingType					
attributes	Name	Type	Use	Default	Fixed	annotation
	pixelvalue-label	xsd:string				
	pixelvalue-unit	xsd:string				

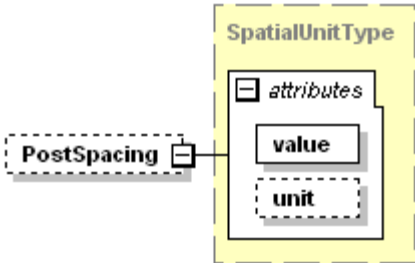
element **RasterChannelType/Elevation**

diagram						
annotation	<p>documentation</p> <p>This channel is mapped to represent elevation. Digital elevation model (DEM) mosaics are processed from remote sensing products so that the digital numbers stored at each pixel location estimate the altitude (above sea level) of the terrain imaged at each pixel. A positive number indicates above sea-level, and a negative number under sea-level.</p>					

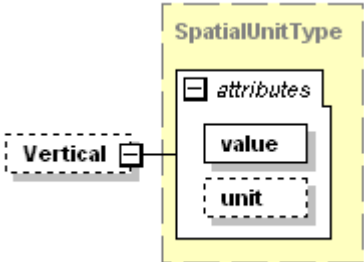
element **RasterChannelType/Elevation/Resolution**

diagram						
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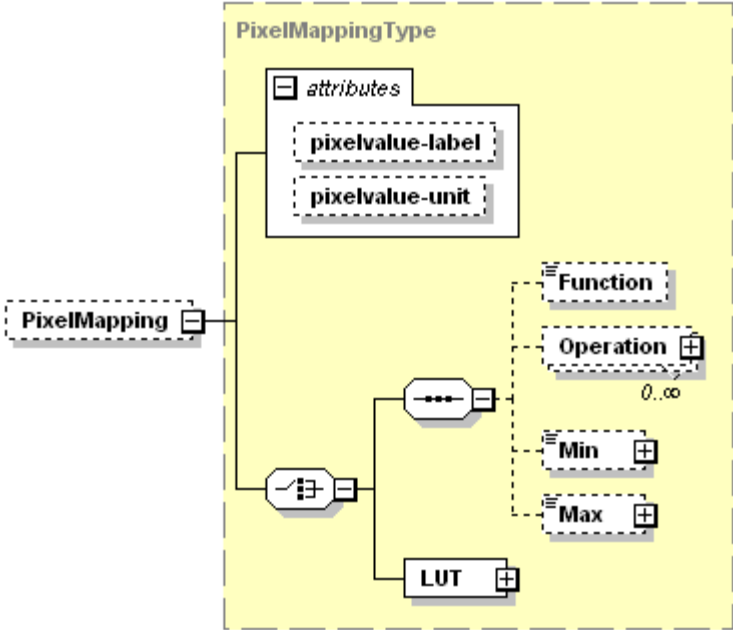
element **RasterChannelType/Elevation/Resolution/PostSpacing**

diagram						
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation


element **RasterChannelType/Elevation/Resolution/Vertical**

diagram						
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

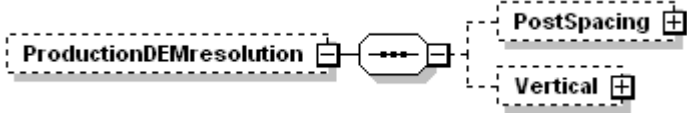
element **RasterChannelType/Elevation/PixelMapping**

diagram						
type	PixelMappingType					
attributes	Name	Type	Use	Default	Fixed	annotation
	pixelvalue-label	xsd:string				
	pixelvalue-unit	xsd:string				

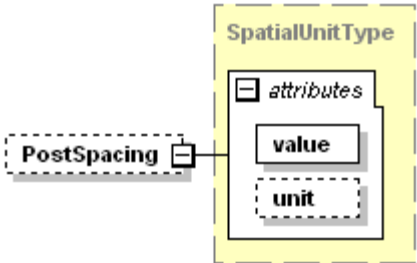
element **RasterChannelType/HorizonMap**

diagram						
annotation	<p>documentation</p> <p>This channel is mapped to represent horizon angles at a single azimuth for each pixel location. Horizon Map mosaics are processed from remote sensing and GIS products so that the digital numbers stored at each pixel location estimate the horizon angle computed for a specified azimuth relative to the terrain imaged at each pixel. In application, these data facilitate real-time shadows on modern rendering architectures. The parameters required for shadow rendering from each layer is contained within the NPSI metadata associated with that layer.</p>					

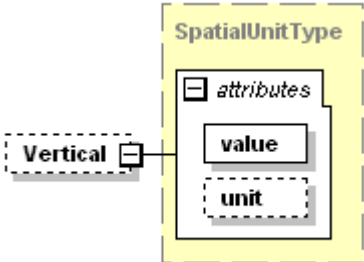
element **RasterChannelType/HorizonMap/ProductionDEMresolution**

diagram						
annotation	<p>documentation</p> <p>Precision of the DEM that was used to compute the horizon angles present in this horizon map.</p>					

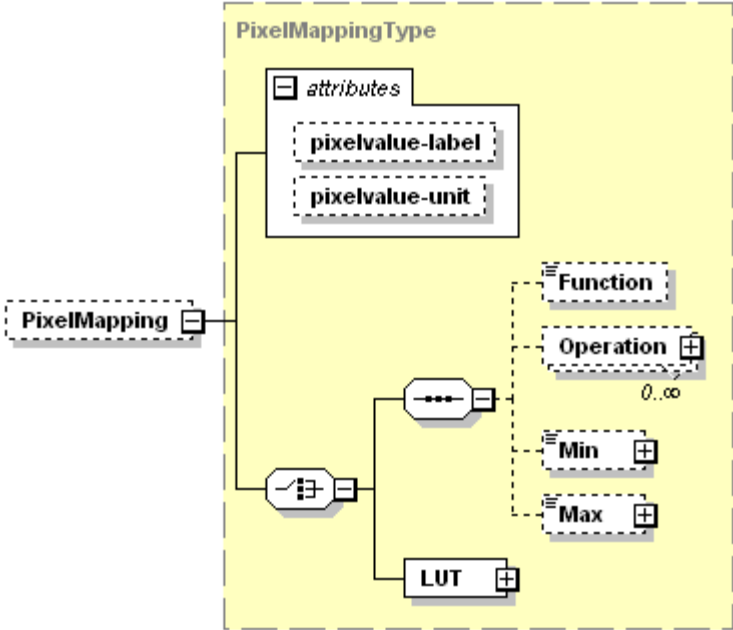
element **RasterChannelType/HorizonMap/ProductionDEMresolution/PostSpacing**

diagram						
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

element **RasterChannelType/HorizonMap/ProductionDEMresolution/Vertical**

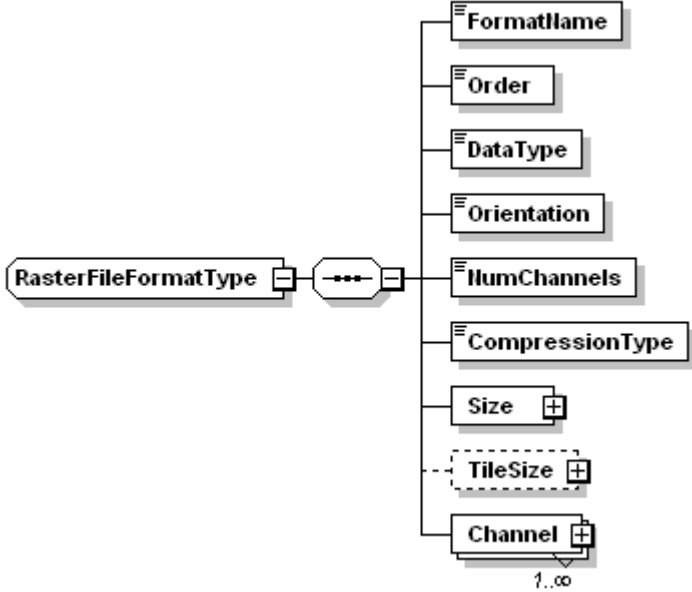
diagram						
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation

element **RasterChannelType/HorizonMap/PixelMapping**

diagram	 <p>The diagram illustrates the structure of the PixelMappingType element. It is a dashed yellow box containing several components. On the left, a PixelMapping element (dashed box with a small square icon) is connected to a central vertical line. This line branches into two paths. The upper path leads to an attributes container (dashed box with a small square icon), which contains two sub-elements: pixelvalue-label and pixelvalue-unit (both dashed boxes). The lower path leads to a sequence of elements: first, a Function element (dashed box with a small square icon), followed by an Operation element (dashed box with a small square icon and a plus sign), then a Min element (dashed box with a small square icon and a plus sign), and finally a Max element (dashed box with a small square icon and a plus sign). The Operation element is annotated with 0..∞. The lower path also branches to a LUT element (dashed box with a small square icon and a plus sign).</p>					
type	PixelMappingType					
attributes	Name	Type	Use	Default	Fixed	annotation
	pixelvalue-label	xsd:string				
	pixelvalue-unit	xsd:string				


A.5.28 RasterFileFormatType

complexType **RasterFileFormatType**


diagram	 <p>The diagram illustrates the structure of the RasterFileFormatType complex type. It is a dashed box containing a sequence of elements. On the left, the RasterFileFormatType element (dashed box with a small square icon) is connected to a central vertical line. This line branches into two paths. The upper path leads to a sequence of elements: FormatName, Order, DataType, Orientation, NumChannels, and CompressionType (all solid boxes). The lower path leads to a sequence of elements: Size, TileSize, and Channel (all solid boxes with a plus sign). The Channel element is annotated with 1..∞.</p>					
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used by	elements GenericRasterFileType/RasterFileFormat TextureFeatureType/RasterFileFormat
annotation	documentation Complex-type: template digital mechanism used to represent spatial information for raster files.

element **RasterFileFormatType/FormatName**

diagram	
type	xsd:string
annotation	documentation Name of the data format, for example, TIFF, DTED, RPF.

element **RasterFileFormatType/Order**

element restriction not on any type or class			
diagram			
type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	BIL	
	enumeration	BSQ	
	enumeration	BIP	
annotation	documentation Binary data storage types; Band sequential (BSQ); Band interleaved by line (BIL); Band interleaved by pixel (BIP).		

element **RasterFileFormatType/DataType**

diagram			
type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	11-BIT	
	enumeration	8-BIT_SIGNED	
	enumeration	8-BIT_UNSIGNED	
	enumeration	16-BIT_SIGNED	
	enumeration	16-BIT_UNSIGNED	
	enumeration	BYTE	
	enumeration	INTEGER	
	enumeration	LONG INTEGER	
	enumeration	UNSIGNED LONG	
	enumeration	FLOATING POINT	
	enumeration	DOUBLE PRECISION	
	enumeration	64-BIT_INTEGER	
	enumeration	64-BIT_UNSIGNED	
	enumeration	COMPLEX	
	enumeration	DOUBLE COMPLEX	
annotation	documentation Data word type.		

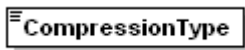
element **RasterFileFormatType/Orientation**

diagram	<div><div></div><div>Orientation</div></div>		
type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	UPPER_LEFT	
	enumeration	UPPER_RIGHT	
	enumeration	LOWER_LEFT	
	enumeration	LOWER_RIGHT	
annotation	documentation Reference point location.		

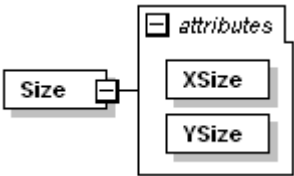
element **RasterFileFormatType/NumChannels**

diagram						
type	xsd:int					
annotation	documentation Number of channel layers.					

element **RasterFileFormatType/CompressionType**

diagram			
type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	LZW	
	enumeration	RLE	
	enumeration	PNG	
	enumeration	JPEG	
	enumeration	NONE	
annotation	documentation File compression type.		

element **RasterFileFormatType/Size**

diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	XSize	xsd:positiveInteger	required			documentation Column pixels count.
	YSize	xsd:positiveInteger	required			documentation Row pixels. count

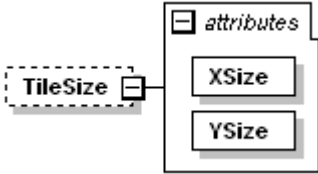
attribute **RasterFileType/Size/@XSize**

type	xsd:positiveInteger
annotation	documentation Column pixels count.

attribute **RasterFileType/Size/@YSize**

type	xsd:positiveInteger
annotation	documentation Row pixels count.

element **RasterFileType/TileSize**

diagram						
attributes	Name	Type	Use	Default	Fixed	annotation
	XSize	xsd:positiveInteger	required			
	YSize	xsd:positiveInteger	required			

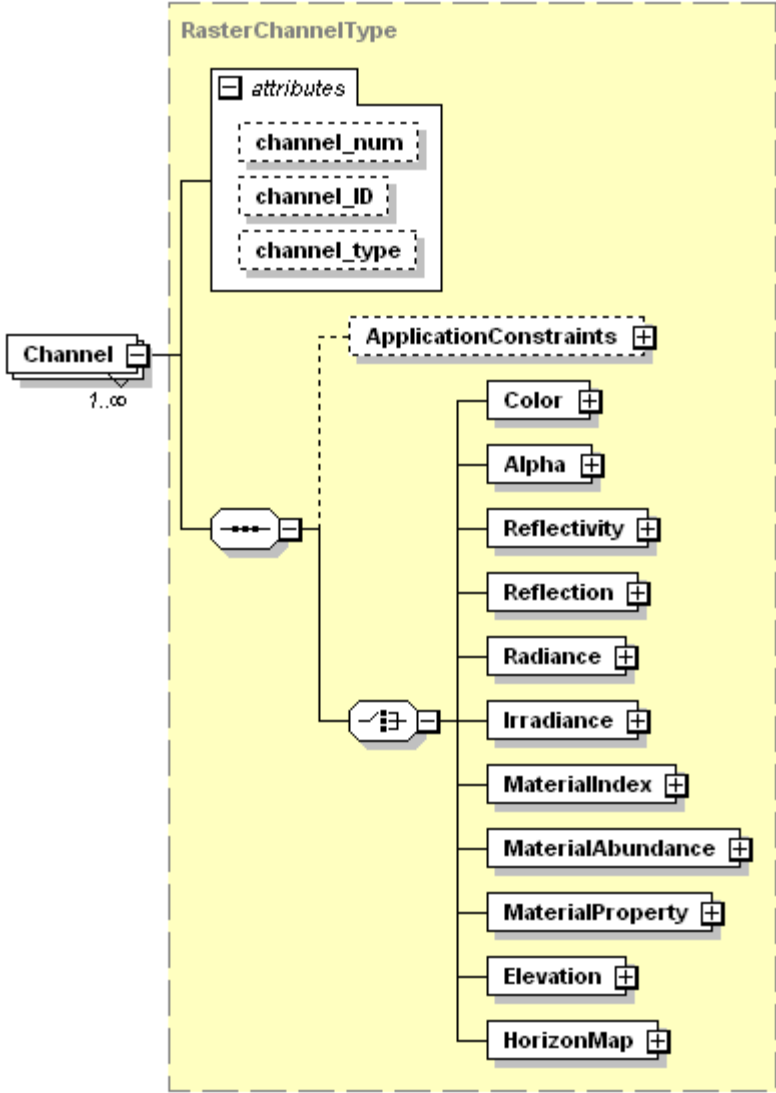
attribute **RasterFileType/TileSize/@XSize**

type	xsd:positiveInteger
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attribute **RasterFileType/TileSize/@YSize**

type	xsd:positiveInteger
------	----------------------------

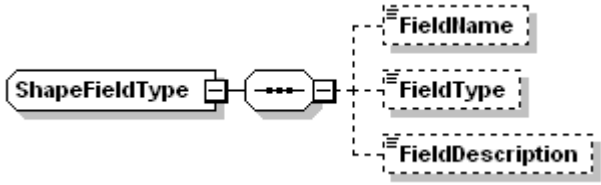
element **RasterFileFormatType/Channel**

diagram						
type	RasterChannelType					
attributes	<div>Name</div> <div>channel_num</div> <div>channel_ID</div> <div>channel_type</div>	<div>Type</div> <div>derived by:</div> <div>xsd:string</div> <div>xsd:ID</div> <div>derived by:</div> <div>xsd:string</div>	Use	Default	Fixed	<div>annotation</div> <div>documentation</div> <div>Channel_ID is a unique ID in a XML document. This is an optional attribute; used when it is necessary to reference this channel from another raster file.</div>
annotation	<div>documentation</div> <div>Raster data channel type and definition. A raster file may contain n number of channels or layers. The channels</div>					


	may be of all the same type or a mix of various types.
--	--

A.5.29 ShapeFieldType


complexType **ShapeFieldType**

diagram	
used by	element VectorFileFormatType/ShapeField
annotation	documentation Complex-type: fields within the vector feature file attribute table.

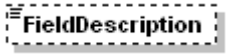
element **ShapeFieldType/FieldName**

diagram	
type	xsd:string
annotation	documentation Name of field.

element **ShapeFieldType/FieldType**

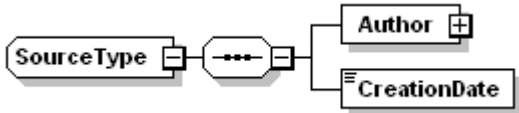
diagram			
type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	String	
	enumeration	Float	
	enumeration	Integer	
	enumeration	Number	
	enumeration	OID	
	enumeration	Geometry	
annotation	documentation Type of data within the field.		

element **ShapeFieldType/FieldDescription**

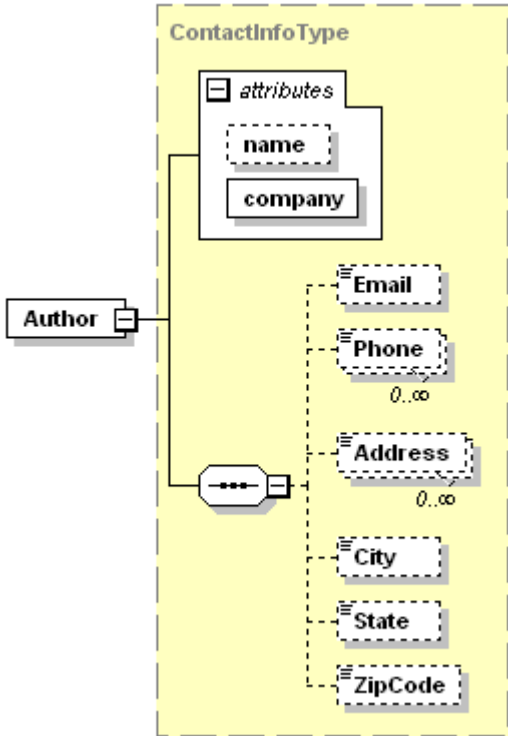
diagram	
annotation	documentation Description of intended use of the field data, i.e feature code, orientation, height, etc.

A.5.30 SourceType


complexType **SourceType**

diagram	 The diagram shows a complex type named 'SourceType'. It consists of a sequence of two elements: 'Author' and 'CreationDate'. Both elements are represented by rounded rectangles with a small square icon on the left side, indicating they are complex types.
used by	element FileRefType/Source
annotation	documentation Complex-type: identification of the data file author and creation date.

element **SourceType/Author**

diagram	 The diagram shows the 'Author' element as part of the 'ContactInfoType' complex type. The 'ContactInfoType' is represented by a large yellow dashed rectangle. Inside it, there is an 'attributes' block containing 'name' and 'company' elements. Below the 'attributes' block, there is a sequence of elements: 'Email', 'Phone', 'Address', 'City', 'State', and 'ZipCode'. The 'Author' element is connected to the 'ContactInfoType' by a line. The 'Address' element has a cardinality of '0..∞'.					
type	ContactInfoType					
attributes	Name name company	Type xsd:string xsd:string	Use required	Default	Fixed	annotation
annotation	documentation Author or vendor's contact information.					

element **SourceType/CreationDate**

diagram	
type	xsd:date
annotation	documentation File creation date.

A.5.31 SpatialUnitTypecomplexType **SpatialUnitType**

diagram						
used by	elements	GeoreferenceType/SpatialReference/Geographic/LatitudeResolution GeoreferenceType/SpatialReference/Geographic/LongitudeResolution RasterChannelType/Elevation/Resolution/PostSpacing RasterChannelType/HorizonMap/ProductionDEMresolution/PostSpacing GenericRasterFileType/TargetResolution TextureFeatureType/TargetResolution RasterChannelType/Elevation/Resolution/Vertical RasterChannelType/HorizonMap/ProductionDEMresolution/Vertical PerspectiveGeoreferenceType/Reference/XCoordinate PerspectiveGeoreferenceType/ViewPoint/XCoordinate GeoreferenceType/SpatialReference/Planar/XResolution PerspectiveGeoreferenceType/Reference/YCoordinate PerspectiveGeoreferenceType/ViewPoint/YCoordinate GeoreferenceType/SpatialReference/Planar/YResolution PerspectiveGeoreferenceType/Reference/ZCoordinate PerspectiveGeoreferenceType/ViewPoint/ZCoordinate				
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default 	Fixed 	annotation
annotation	documentation Complex-type: per-pixel size in spatial unit.					

attribute **SpatialUnitType/@value**

type	xsd:double
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attribute **SpatialUnitType/@unit**

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	KILOMETERS	
	enumeration	METERS	
	enumeration	CENTIMETERS	
	enumeration	MILES	
	enumeration	FEET	
	enumeration	INCHES	

	enumeration	DEGREES_LATLON
	enumeration	ARCSEC
	enumeration	ARCMIN
	enumeration	ARCDEG

A.5.32 SpectralDistributionType

complexType **SpectralDistributionType**

diagram						
used by	element	DictionaryType/SpectralProfile/SpectralDistribution				
attributes	Name	Type	Use	Default	Fixed	annotation
	Region	derived by: xsd:string				
annotation	documentation Complex-type: defines a spectral distribution.					

attribute **SpectralDistributionType/@Region**

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	UV	
	enumeration	Visible	
	enumeration	NIR	
	enumeration	IR	
	enumeration	RED	
	enumeration	GREEN	
	enumeration	BLUE	

element **SpectralDistributionType/Wavelength**


diagram						
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attributes	Name Unit	Type derived by: xsd:string	Use	Default	Fixed	annotation
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attribute **SpectralDistributionType/Wavelength/@Unit**

type	restriction of xsd:string					
facets	Kind	Value	annotation			
	enumeration	nm				
	enumeration	um				

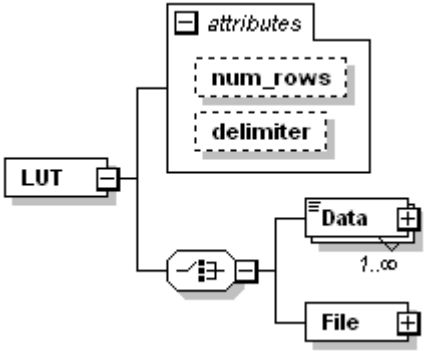
element **SpectralDistributionType/Wavelength/Min**

diagram						
type	xsd:decimal					

element **SpectralDistributionType/Wavelength/Max**

diagram						
type	xsd:decimal					

element **SpectralDistributionType/LUT**

diagram						
attributes	Name num_rows delimiter	Type xsd:integer derived by: xsd:string	Use	Default	Fixed	annotation
annotation	documentation Look-up Table data in the format of paired X,Y, where X=wavelength and Y=normalized response between 0 to 1.0.					

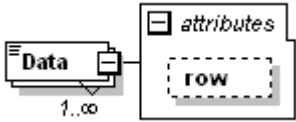
attribute **SpectralDistributionType/LUT/@num_rows**

type	xsd:integer
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attribute **SpectralDistributionType/LUT/@delimiter**

type	restriction of xsd:string		
facets	Kind	Value	annotation
	enumeration	,	
	enumeration	/s	
	enumeration	/t	
	enumeration	;	

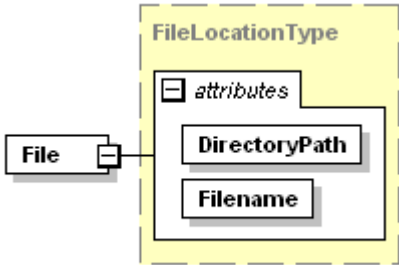
element **SpectralDistributionType/LUT/Data**

diagram						
type	extension of xsd:string					
attributes	Name	Type	Use	Default	Fixed	annotation
	row	xsd:integer	optional			

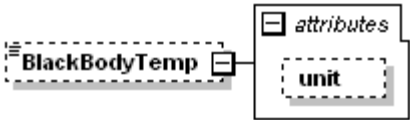
attribute **SpectralDistributionType/LUT/Data/@row**

type	xsd:integer
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element **SpectralDistributionType/LUT/File**

diagram						
type	FileLocationType					
attributes	Name	Type	Use	Default	Fixed	annotation
	DirectoryPath	xsd:string	required			documentation Path to the file location. This path is relative to the location of this XML file.
	Filename	xsd:string	required			documentation Filename with extension.

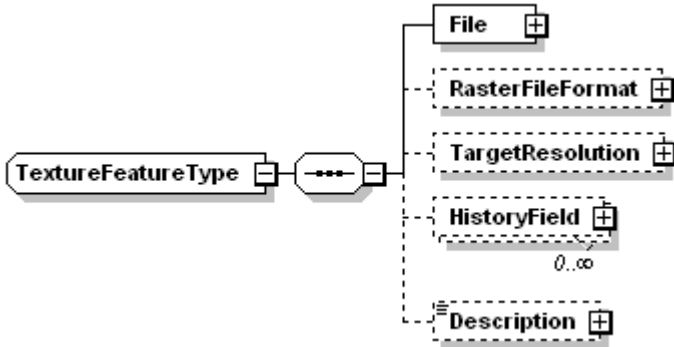
element **SpectralDistributionType/BlackBodyTemp**

diagram	 The diagram shows a box labeled 'BlackBodyTemp' with a dashed border. To its right is a larger box labeled 'attributes' with a solid border. Inside the 'attributes' box is a smaller dashed box labeled 'unit'. A line connects the 'BlackBodyTemp' box to the 'attributes' box.					
type	extension of xsd:decimal					
attributes	Name	Type	Use	Default	Fixed	annotation
	unit					

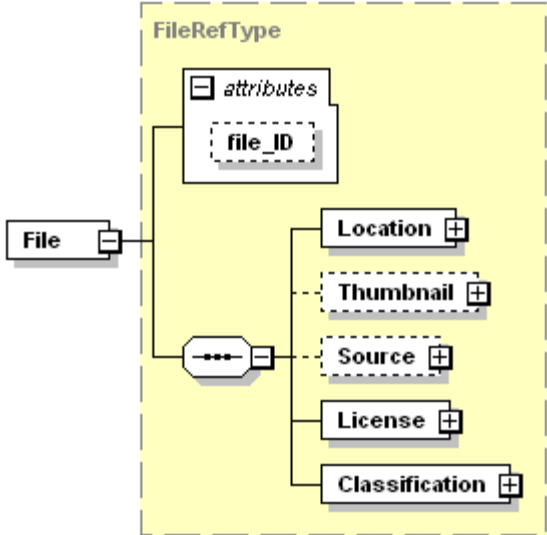
attribute **SpectralDistributionType/BlackBodyTemp/@unit**

A.5.33 TextureFeatureType

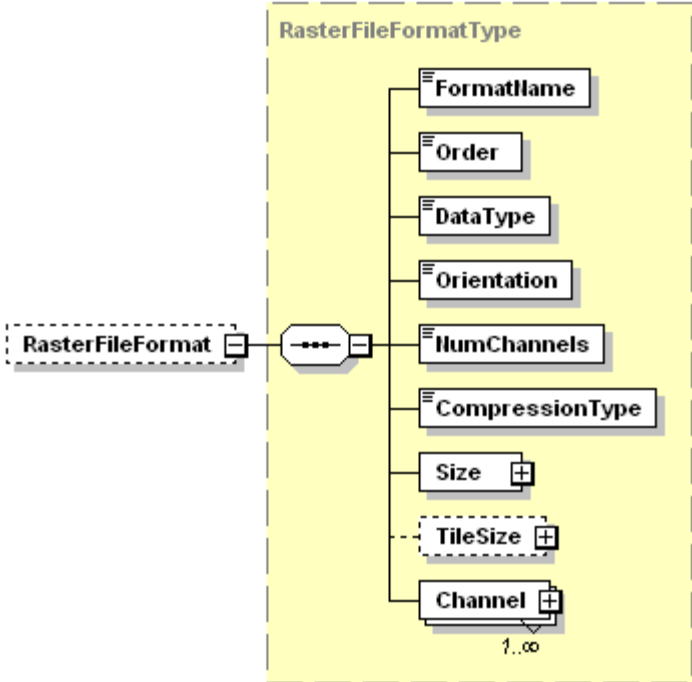
complexType **TextureFeatureType**

diagram	 The diagram shows a box labeled 'TextureFeatureType' with a solid border. To its right is a dashed box containing a sequence of elements: 'File' (solid box), 'RasterFileFormat' (dashed box), 'TargetResolution' (dashed box), 'HistoryField' (dashed box), and 'Description' (dashed box). Each of these elements has a small box with a '+' sign next to it. A line connects the 'TextureFeatureType' box to the dashed box.					
used by	elements	ModelFeatureType/Textures/Texture NPSIBase/NPSIDataset/CulturalFeatureData/TextureFeature				
annotation	documentation	Complex-type: template texture raster file.				

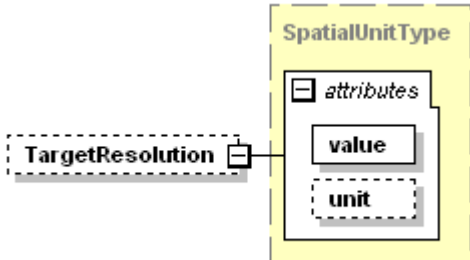
element **TextureFeatureType/File**

diagram	 <p>The diagram illustrates the structure of the FileRefType element. It is a yellow-shaded box containing an 'attributes' section with a 'file_ID' attribute. A 'File' element is connected to the 'FileRefType' box. Inside the box, there is a connector (a circle with three dots) that branches into five elements: 'Location', 'Thumbnail', 'Source', 'License', and 'Classification'. Each of these elements has a '+' icon in its top right corner, indicating they are optional or can be repeated.</p>					
type	FileRefType					
attributes	Name file_ID	Type xsd:ID	Use	Default	Fixed	annotation documentation File ID is required only if this file is being referenced within this document.
annotation	documentation File identification information.					

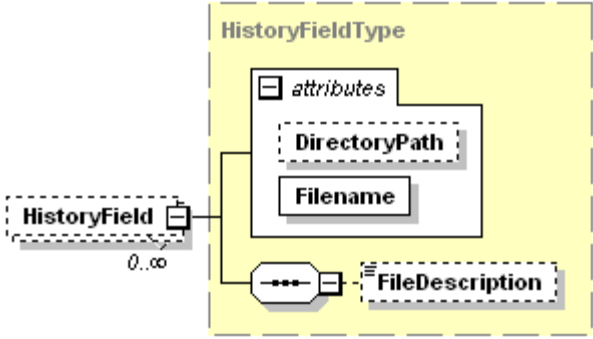
element **TextureFeatureType/RasterFileFormat**

diagram	 <p>The diagram illustrates the structure of the RasterFileFormatType element. On the left, a dashed box labeled RasterFileFormat is connected to a central connector. This connector leads to a large yellow box labeled RasterFileFormatType. Inside this box, a vertical list of elements is shown: FormatName, Order, DataType, Orientation, NumChannels, CompressionType, Size, TileSize, and Channel. The TileSize and Channel elements are enclosed in dashed boxes and have a '+' sign next to them, indicating they are optional. A '1..∞' cardinality is shown at the bottom of the Channel element.</p>
type	RasterFileFormatType
annotation	documentation Template digital mechanism used to represent spatial information for raster files.

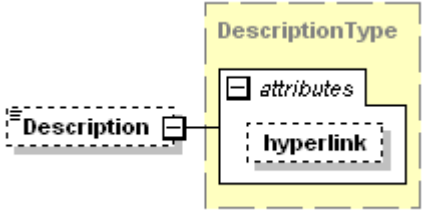
element **TextureFeatureType/TargetResolution**

diagram	 <p>The diagram illustrates the structure of the SpatialUnitType element. On the left, a dashed box labeled TargetResolution is connected to a central connector. This connector leads to a large yellow box labeled SpatialUnitType. Inside this box, a vertical list of elements is shown: attributes, value, and unit. The unit element is enclosed in a dashed box and has a '+' sign next to it, indicating it is optional.</p>					
type	SpatialUnitType					
attributes	Name value unit	Type xsd:double derived by: xsd:string	Use required	Default	Fixed	annotation
annotation	documentation Intended resolution for runtime application.					

element **TextureFeatureType/HistoryField**

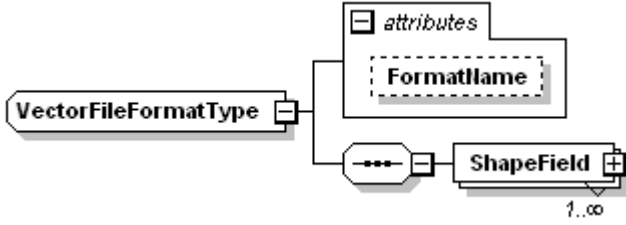
diagram						
type	HistoryFieldType					
attributes	Name DirectoryPath	Type xsd:string	Use optional	Default	Fixed	annotation documentation Path to the file location. This could be URL, relative, or absolute path.
	Filename	xsd:string	required			documentation Filename with extension.
annotation	documentation List of fields within the vector feature file attribute table.					

element **TextureFeatureType/Description**

diagram						
type	DescriptionType					
attributes	Name hyperlink	Type xsd:string	Use	Default	Fixed	annotation
annotation	documentation Description of this raster data. The text for this description may be referenced in the hyperlink attribute.					

A.5.34 VectorFileFormatType

complexType **VectorFileFormatType**

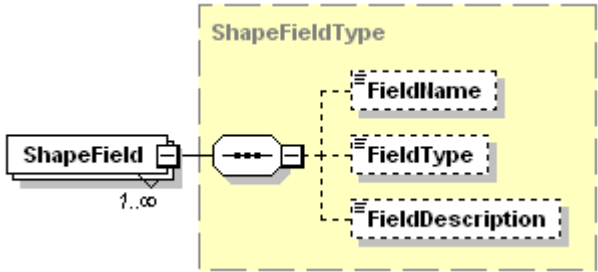
diagram						
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used by	element GenericVectorType/VectorFileFormat					
attributes	Name FormatName	Type derived by: xsd:string	Use	Default	Fixed	annotation documentation Vector feature file type (currently restricted to ESRI shapefile).
annotation	documentation Complex-type: vector feature file format.					

attribute **VectorFileFormatType/@FormatName**

type	restriction of xsd:string		
facets	Kind enumeration	Value Shapefile	annotation
annotation	documentation Vector feature file type (currently restricted to ESRI shapefile).		

element **VectorFileFormatType/ShapeField**

diagram	 <p>The diagram illustrates the relationship between the ShapeField element and the ShapeFieldType complex type. A ShapeField element, shown as a rectangle with a small square on its right side, is connected by a line to a ShapeFieldType element, which is a larger rectangle with a dashed border. The ShapeField element has a cardinality of 1..∞. The ShapeFieldType element contains three sub-elements: FieldName, FieldType, and FieldDescription, each represented by a rectangle with a dashed border and a small square on its left side. The ShapeFieldType element is labeled 'ShapeFieldType' in the top left corner.</p>		
type	ShapeFieldType		
annotation	documentation List of fields within the vector feature file attribute table.		